ARCHITECTURE & DESIGN

PROJECTS PRODUCTS PEOPLE / OCT-DEC 2024 / THE SUSTAINABILITY ISSUE

2024 SUSTAINABILITY AWARDS WINNERS ISSUE

SUSTAINABLE BUILDING MATERIALS

RECREATION AND SPORTING FACILITIES + TRANSPORT

ADAPTIVE REUSE IN REGIONAL AUSTRALIA

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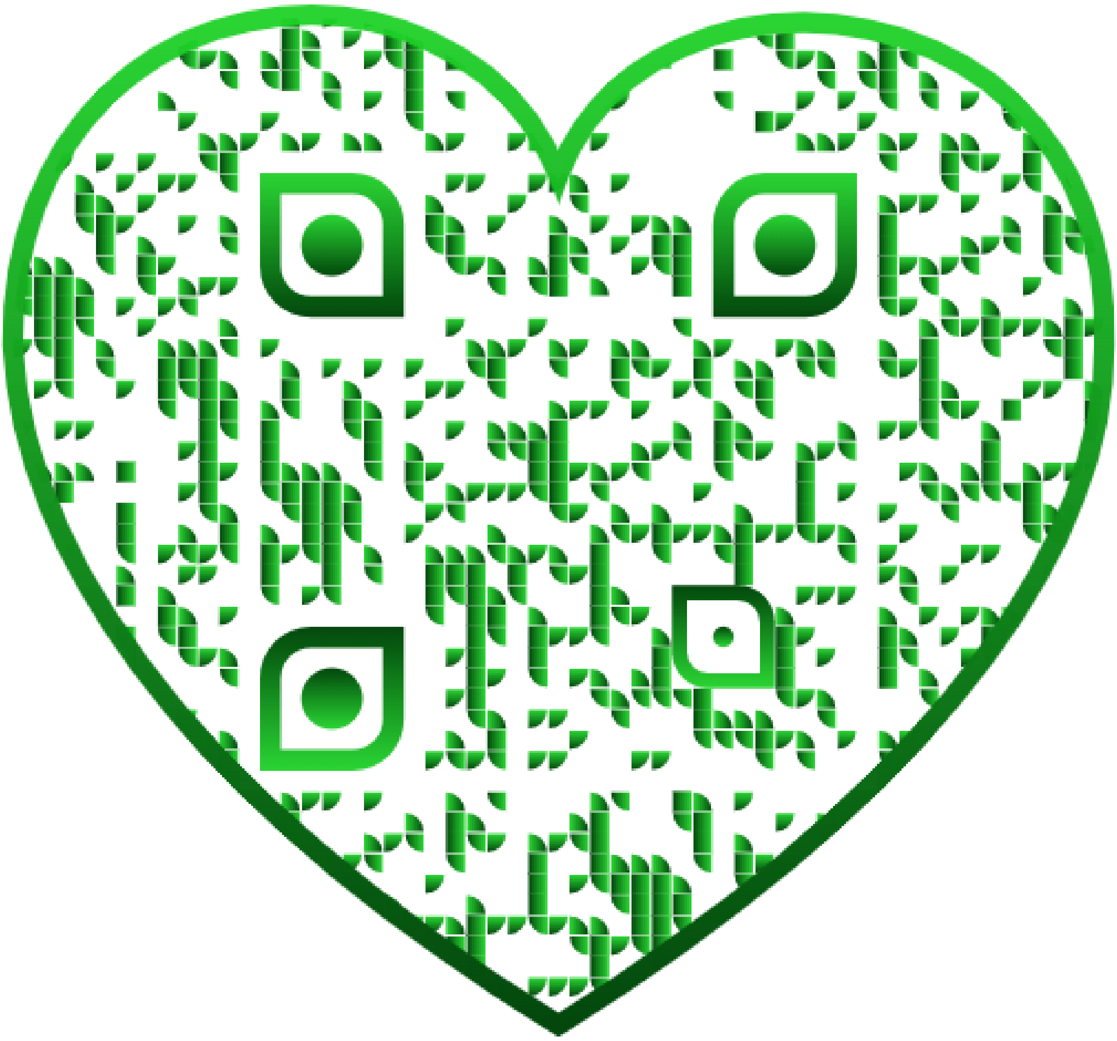

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Editor's Letter

BRANKO MILETIC

The 18th Annual Sustainability Awards, hosted by Architecture & Design magazine, unfolded in the grandeur of Sydney's historic Town Hall, blending tradition with innovation in a celebration of the future of design.

The event brought together brought together an eclectic mix of architects, urban planners, and environmental advocates, all united by a common purpose: to create structures that do more than house—they heal, nurture, and inspire.

This year's award winners demonstrated a striking diversity of approaches to sustainability. From 6-star Green Star mass-timber commercial building like Best of the Best winner T3 Collingwood by Jackson Clements Burrows Architects which was designed to harness Australia's abundant sunlight, to urban hotels like HIP V. HYPE's HV.Hotel built from reclaimed timber, the projects were united by a commitment to minimising their environmental footprint.

Holocene House, a Sydney project by CplusC Architects, was among the night's standouts, earning praise for its use of sustainable materials and energy-efficient design that responds elegantly to its surroundings.

For the Lifetime Achievement Award, this year, that honour was bestowed upon Professor Mat Santamouris from the University of NSW who was recognised for his lifetime contribution to sustainable architecture, while the Emerging Architect/Design winner was architect Sophie Canaris from the Powerhouse Museum.

The judges noted that this year's selection favoured projects that extended their sustainable ethos beyond construction, integrating aspects like water conservation, biodiversity, and community engagement.

The Awards Gala was not just about accolades but a platform for critical conversation, while earlier in the day, the Sustainability Summit panel event, featured industry stalwarts, debated the role of design in addressing climate change and urged a redefinition of what it means to be sustainable. They highlighted the need for holistic, forward-thinking approaches that encompass every stage of a project's lifecycle—from planning to construction to long-term impact on its environment and community.

The 2024 Sustainability Awards were more than a celebration—they were a call to action. The projects showcased in Sydney's iconic 150-year old Town Hall have set a new benchmark for the industry, reflecting a growing recognition that sustainable design is not just a fad or a trend, but the future of architecture, demanding bold thinking, innovation, and a deep respect for the environment.

This issue, our last for 2024, celebrates not only the winners – but also all those that entered the 18th annual Sustainability Awards and is a testament to just how far sustainability has come in all those years.

This issue also looks at two types of sustainable developments that are on the opposite sides of the typology spectrum – one in the central west region of NSW, and the other, right in the heart of Sydney, both different ways to approach adaptive reuse, a key pathway to better sustainability in our built environment.

ON THE COVER Both the GBCA Green Star sustainability rating and NABERS energy rating tools were used for T3 Collingwood. Sustainability was a central focus. The design sought to deliver a thermally efficient high-performing building that is low carbon and low-cost to operate. T3 has been awarded 6-star Green Star (Design) and its mass-timber construction, sourced ethically from local renewable forests, contains 34% less embodied carbon than an equivalent concrete structure. The project is targeting 5.5 Star NABERS rating for energy use.

PHOTOGRAPHY:
John Gollings & Tom Blachford.

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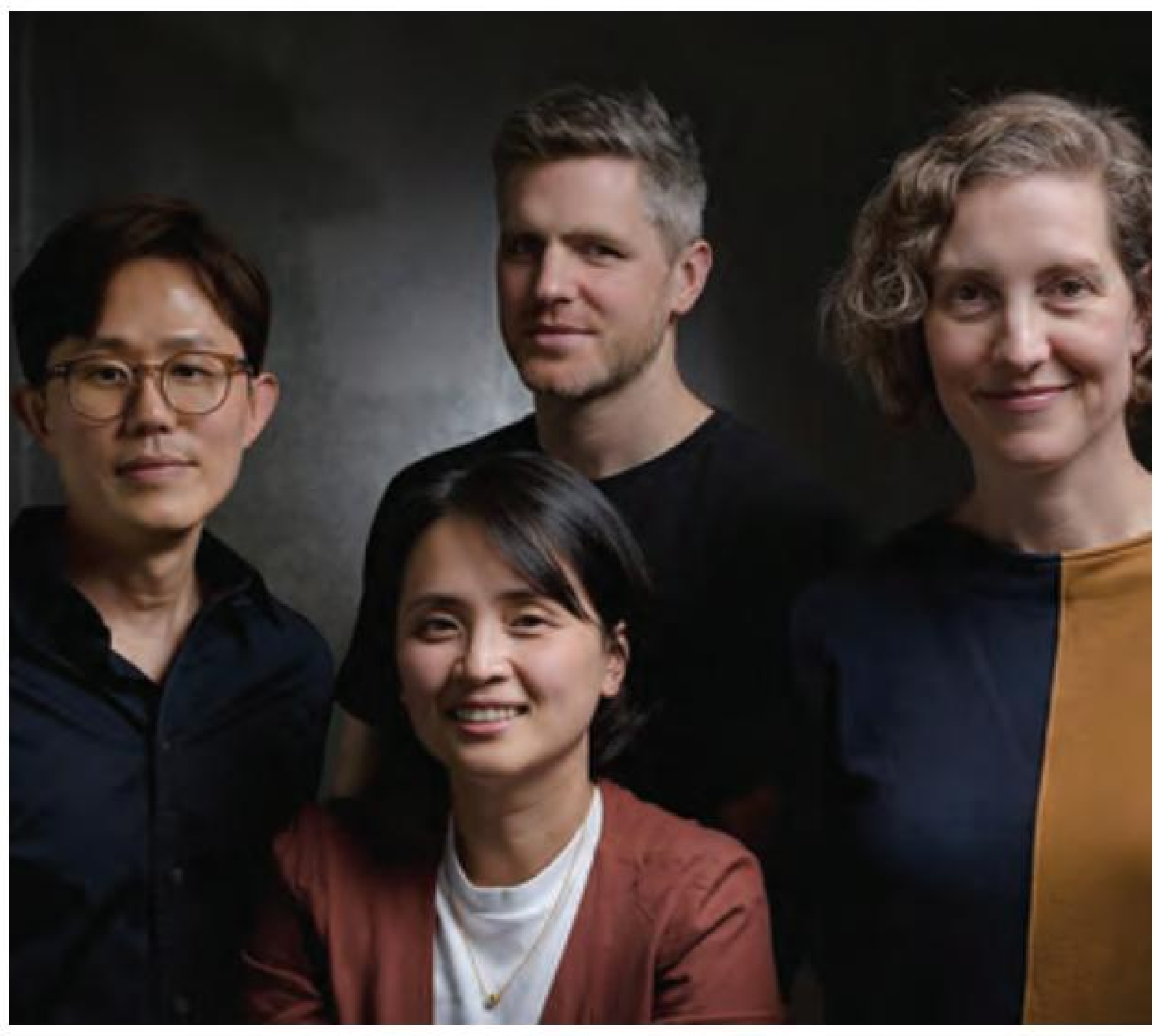
Appointments



ABOVE Miriam Harris, Rejing Wang, Marc Kim, Graham Craigie.

DENTON CORKER MARSHALL PROMOTES FOUR TO KEY LEADERSHIP POSITIONS

Leading architecture and urban design practice Denton Corker Marshall announces the promotion of four outstanding team members to key leadership positions. These promotions reflect the company's commitment to recognising and nurturing talent within the practice.

Miriam Harris and Marc Kim have been promoted to the role of Senior Architect. Both have demonstrated exceptional skill and dedication, contributing significantly to the success of projects in the infrastructure and hospitality sectors. Their expertise and innovative approach will continue to drive the company's architectural excellence.

Rejing Wang, who has been promoted to Associate, has a proven track record of success, a deep understanding of our clients' needs, and consistently delivered outstanding results. In this new role, she will continue to enhance our service offerings and strengthen client relationships.

Graham Craigie has been promoted to Director. A pragmatic and dedicated leader, he has a nuanced and multifaceted approach to architecture designed for community, connected to the culture of the city, and ever cognisant of commercial outcomes. Denton Corker Marshall welcomes Craigie to practice leadership and foster continued growth and innovation for the studio.

KARIN WOUTERS JOINS MATTHEWS ARCHITECTS AS DESIGNER AND PROJECT LEADER

Leading South Australian architecture and interior design firm Matthews Architects announces the appointment of Karin Wouters as Designer and Project Leader at their North Adelaide studio.

Wouters, who brings more than 10 years of industry experience in Australia and internationally to her new role, has delivered complex large projects across medical, education, hospitality, residential and social housing segments.

After completing her architectural studies in Germany and a subsequent internship in France, Wouters spent two years predominantly working on a hospital development and the Toulouse Airport expansion. On relocating to Perth, she worked on residential architecture projects as well as a hospitality development for three years.

Returning to France in 2014, Wouters subsequently moved to French Guiana in South America, where she spent the next six years working on a diverse range of projects including social housing, large-scale developments, mixed-use buildings, and a high school and boarding school development, before moving to Adelaide this year.

ABOVE Karin Wouters / Supplied.

ABOVE Cameron Smith, Kieran Leong, Jane Sayers, Nicole de Lacy, and Adrian Doohan / Image credit to Lucas Allen.

DESIGNINC MELBOURNE STRENGTHENS SENIOR LEADERSHIP

Five new senior leadership positions have been announced by DesignInc Melbourne, as two new Directors and three Principals strengthen DesignInc's leadership team. The move expands the director group to six within the Melbourne design firm.

New Directors Jane Sayers and Kieran Leong are both passionate about design and its potential to positively influence people's lives. The new Principals, Nicole de Lacy, Adrian Doohan and Cameron Smith are all established and highly respected leaders within the practice and industry.

A leader with over two decades of experience, architect Sayers joined DesignInc in 2005 and became a Principal in 2021. As Director, she will have continued involvement across a broad portfolio of projects in education, health, and research sectors.

As an advocate for quality in process and design, architect Nicole de Lacy is a highly valued and sought after leader in the practice and Industry. De Lacy brings a calm assurance to her team and clients, expertly navigating complex relationships and briefs.

Adrian Doohan is a highly experienced leader and architect with over two decades experience in delivering complex briefs and projects in Melbourne for DesignInc. In addition, he has expertly led internal teams within the practice for over a decade with a focus on supportive wellbeing as a basis for successful project outcomes.

All round architectural leader Cameron Smith has been responsible for leading many of DesignInc's most challenging design projects. Smith is a talented architect and model leader with a progressive style and diverse skill set that enables him to negotiate the complexities of team dynamics and project challenges.

MILIEU CREATIVE AND STATUO GROUP APPOINT MIKE HARVEY AS GROUP GENERAL MANAGER

ABOVE Mike Harvey, Mike Harvey, Davina Bester, Natasha Haden and Aaron Bester / Supplied.

Design practice Milieu Creative Property and construction company Statuo Group have announced the appointment of Mike Harvey as the company's Group General Manager.

An industry heavyweight with more than 20 years of construction and development experience leading teams at Built, Georgiou, Probuild Construction and Edge Living; Harvey will now lead Statuo Group and Milieu Creative's portfolio, extending the services of Milieu Creative to deliver a holistic approach to design, development and construction.

Established in 2021, Statuo Group was born from the success of Milieu Creative, with a joint vision to curate human-centred experiences through space. Both companies now work holistically to deliver projects to challenge the status quo.

Harvey's appointment builds on recent senior additions to the Statuo team, including the appointment of Natasha Haden as Construction Manager.

Haden joined Statuo from Built, where she led a series of flagship projects including State Buildings and His Majesty's Theatre in Perth.

Testament to its collective approach to delivery, both companies recently relocated under one roof in the group's new Subiaco head office, which was designed, developed and constructed by the in-house team.

Statuo Group delivers residential, commercial, industrial and mixed-use projects that maximise value and optimise the user experience. Together with Milieu Creative, the group has delivered several end-to-end projects as one team.

WARDLE WELCOMES JACK DAVIES TO THE TEAM

Wardle recently welcomed Jack Davies to the team, where he'll lead the practice's Multiple Housing strategy.

Davies is an astute architect and design manager specialising in predominantly high-quality housing, social housing and cultural projects in his more than a decade of practice.

Having worked in Australia, the Middle East, Europe and New Zealand, he has experience on all project phases from feasibility and concept design, through to documentation and delivery.

Working in both the private and public sector, Davies has a comprehensive understanding of the current issues in housing - and the mechanisms that enable strong design outcomes to occur.

ABOVE Jack Davies / Supplied.

ABOVE James Lauman (right), Milena Grbovic (left) / Supplied.

TURNER BOLSTERS SENIOR TEAM WITH PROMOTIONS

The Sydney architecture and design practice has announced two promotions within the senior team.

James Lauman has been appointed an Associate Director, while Milena Grbovic is now a Senior Associate (BIM Lead).

The promotions signal a strategic strengthening of the practice's senior team.

TURNER's Head of People & Culture Sika Fernandez says the practice is poised to continue delivering exceptional design for its clients.

Lauman joined TURNER in 2017 after working at practices in Australia and in the United States.

He co-leads the Design Culture Panel at TURNER, advocating for ever-strengthening schemes through design reviews and design talk symposia.

Grbovic has been a valued member of TURNER's team for 14 years. As BIM leader, she oversees the architectural and office standards.

Her promotion highlights the importance of BIM at TURNER, and its critical role in the built environment.

CATHERINE KEYS BECOMES CARR'S ASSOCIATE DIRECTOR

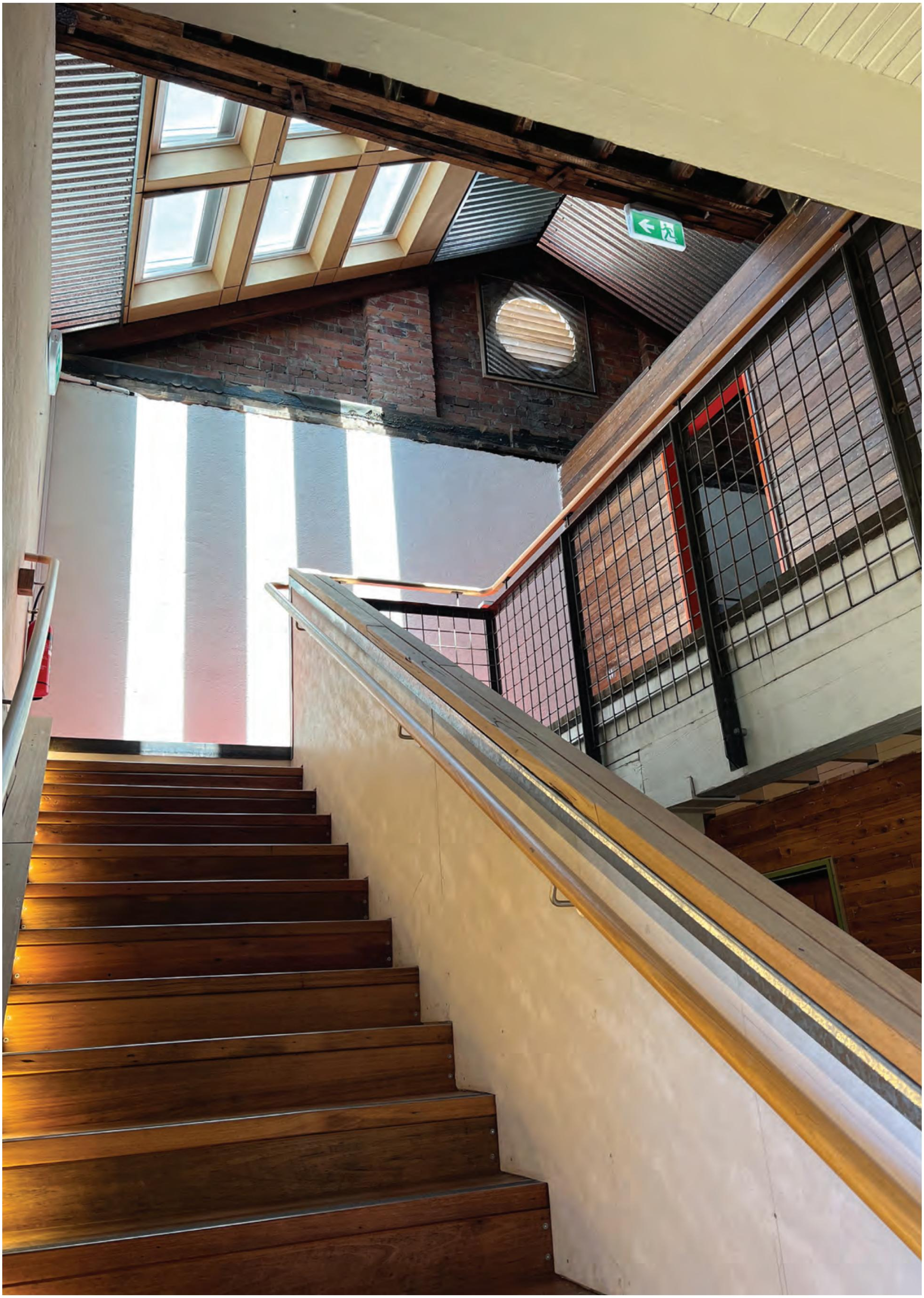
Carr has announced the elevation of Catherine Keys to Associate Director, a promotion in accordance with her significant contribution to Carr's commercial interiors portfolio and further strengthens the studio's executive leadership team.

As Associate Director, Keys hopes to bring a strong focus on crafting human-centred and responsible design outcomes across our projects.

For her, Quality design means design that speaks to its users and addresses their unique needs. It's design that is good for the planet, good for people and lasting in nature.

Having successfully delivered Russell Kennedy and Merricks Capital this year, and with a series of large and small-scale endeavours in Victoria, New South Wales, South Australia and Queensland underway, she continues to design and lead complex and innovative projects with the team.

ABOVE Catherine Keys / Supplied.



ABOVE The geometric staircase at the old Dairy Farmers building.

Adaptive re-use is going country

WORDS PRUE MILLER

It's faster, it's cheaper, it creates important savings for the environment as well project owners. Building via adaptive reuse is more than a capital city concept, it's finding a much-needed place in Australia's rural and regional landscape.

The first day of architect and building owner Tony McBurney's adaptive reuse, did not go according to plan.

"I took the builders down [to the site] and left them for the day to start into it. I arrived back down there later and there was a skip with wonderful bits of timber thrown in already… I actually climbed into the skip," says McBurney.

When building from scratch it's unlikely you'll end up hip deep in a skip – but you certainly will end up with greater construction costs, and be responsible for greater ecological debt. Reuse of buildings, giving them a second life is a win-win for just about everybody involved.

"Making good use of the resources we have is kind of our custodial role, isn't it?" asks Tony whose project, an office building, is now complete. It is a striking building that speaks to its place in the richly historic town of Bathurst in central NSW.

The building, known as the old Dairy Farmers building was a 120-year-old cool room, designed to house the towns' original vegetable market. As with so many older buildings, it was built with extraordinary features, that were not easily visible; such as walls that had up to four skins, (including brick and bitumen), insulation that never gave way, and the ground floor?

"Technology wise, it is a stunning building. The ground level had a saltwater gravity cooling system… and there were four cool rooms above that, and each of those had a different temperature," says McBurney, "It's actually a giant esky."

An esky that had been abandoned for quite some time – inhabited only, according to McBurney, by squatters, cats and pigeons. It was, for all intents and purposes a plain looking building – so why save it? It almost runs against the grain of saving only that which is popular – such as Federation era buildings, or pieces from the Arts and Crafts movement.

But if we only save and replicate that style, what will become of our greater range of architecture? There is the threat that there will be streets in the future, filled with faux federation mansions, and streetscapes titillated by replica iron lacework in a scale that tells a false narrative. In stark contrast but equally concerning is the rush of some areas to be 'contemporary'. In some cases developers have succeeded in bulldozing whole blocks of towns, to erect glass and steel edifices in the name of progress, that can destroy a town's heart (and tourist dollar value), and of course, remain without context.

What is happening with adaptive reuse is a tale of the greater use of buildings, even those that do not appear to be grand edifices such as capital city post offices or abandoned schools. To see and reap the value of buildings that have an inherent, though unobtrusive value, is perhaps a greater cause than pure preservation.

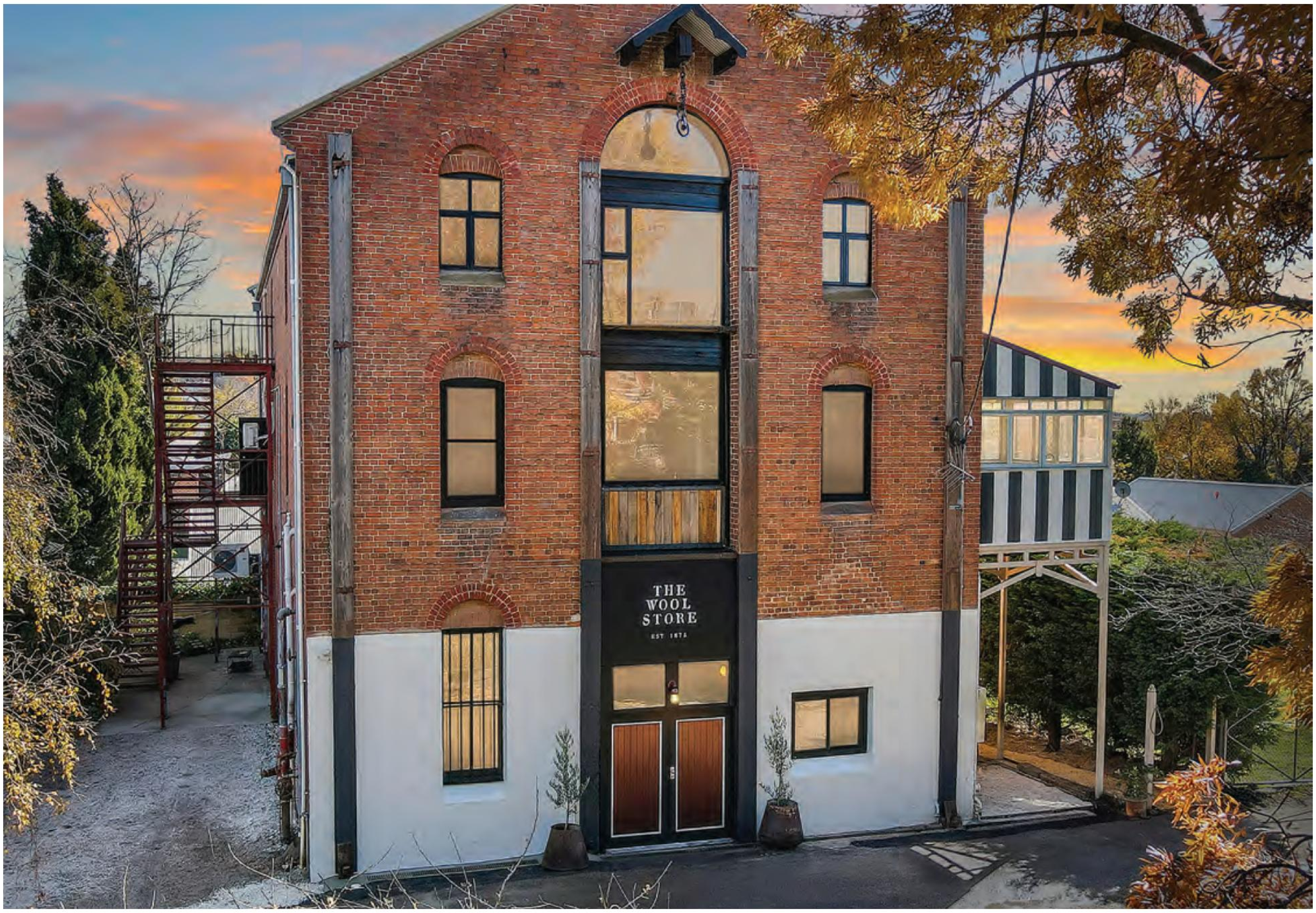
McBurney has worked on many projects that are not in this sphere, but this style of work has become important to him.

"It's not my only burning passion, buy yes, making good use of the resources we have is that's kind of our custodial role, isn't it?" says McBurney. When talking about his Dairy Farmers project, his delight in the project is clearly evident.

From the geometric staircase treatment, which allowed them to retain the original balustrade while complying with building codes (they christened the builder who created the sculptural piece an 'artist') to the exposed warehouse beams, McBurney has created a building here that resounds with the nature of its past, while clearly expressing its modern, contrasting additions.

Regional centres have managed, to a great extent, to hang onto buildings that have fallen into difficult times longer than capital cities, where developers compete for every square centimetre of commercial or residential space. The push for space is not as great where land can still be found, and as a result buildings can stay unloved and abandoned a little longer than in capital cities. But that too is changing. Councils here are also pressed for money, so developers who are happy to make large (some say over market) contributions and fees to council are managing to make inroads in the regional race.

"In the regional areas there are properties that are seen as being an 'old part of town',



ABOVE The Wool Store in Bathurst, established 1875.

a space everybody is trying to move on from," explains McBurney. "and so there are seriously undervalued properties of very high quality, often well-conceived and created with great effort and good craftsmanship that over time have become not the 'latest greatest' thing, and people move onto something else, often of not as high quality. So, regions do have a lot of good property that is not well enough cared for."

A few kilometres away and another Bathurst building has been given a new lease of life. The Wool Store, established 1875, is just off Keppel Street and was in fact, just that. An integral part of the wool business that was an early stalwart of the growing Bathurst township of the 19th century.

Owners Keith and Maz Hamish, who specialize in designing luxury holiday accommodation, on top of running a successful sheep station, immediately saw the potential of this imposing three level building, which although hidden from street view, was in the centre of town.

"Beautiful Bathurst brick, 22-foot ceilings," says Keith Hamish. And who could not see that original gantry and not fall in love? "It had the bones."

Since it's wool store days it had housed a rag trade business staffed with up to 35 ladies, a mechanic reportedly once used the ground level, and at a later date, a 'budget style' room rental business.

Fresh from highly successful building projects on their Wilga sheep station, the couple moved their building team straight on to converting the wool store into six, luxurious holiday rental apartments which includes what the designers describe as a New York Loft residence.

"Everything had 10 – 12 layers of paint on it," recalls Hamish with a grimace. "We had to grind them off."

The renovations required to adapt the building to contemporary accommodation were completed in months, not years. It opened in 2022 and has proved to be a much-loved landmark in the town, and given the choice between cardboard cut-out local motels, and this fabulous, adapted building, the tourists in town have proved to be astute customers, keen to experience history as well as luxury.

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Atlassian Central: A masterclass in commercial sustainability and innovation

WORDS HAMISH MCDONALD

With a portfolio valued at $54.5 billion, Dexus is a leading Australasian force in real estate and infrastructure, that took up an early position in one of Sydney's – and the world's – most innovative office buildings, Atlassian Central, as its project director Peter Morley tells Architecture & Design's Hamish McDonald.

ABOVE Peter Morley.

> **We are on track to achieve the set sustainability targets of 50% reduction in upfront embodied carbon and 50% reduction in operational energy compared to a conventionally operated building.**

HAMISH MCDONALD: You don't often get a partner like Atlassian. How did the project develop?

PETER MORLEY: In early 2021, Atlassian ran an expression of interest process with a select group of developers to co-own and develop their Australian head office in Sydney. Atlassian had already secured an agreement with the NSW Government on a prime location for its headquarters next to Central Station, which would be a catalyst for the development of the Tech Central precinct. Dexus has a strong track record as an owner and developer of Premium commercial precincts and after a highly competitive process, we were chosen as Atlassian's partner on this project. We then worked with Atlassian to finalise the deal with both Transport for NSW and the builder, Built in joint venture with Obayashi (BOJV). This project is about leadership. Atlassian and Dexus have a shared vision that this tower represents an office tower and workplace of the future. Partnering with Australia's most successful tech company, Atlassian, and the NSW Government means that this project can push the boundaries of what is possible in sustainability and innovation for office buildings globally. Construction of the tower kicked off in August 2022 and recently reached the halfway point of its construction timeline.

HM: This project launched in the midst of the COVID pandemic. People were working from home and the conventional office workplace seemed under question. Did that change how the design evolved, or was Atlassian ahead of that curve anyway?

PM: This deal was announced over a year into the pandemic, when work from home was well established. In this context, Atlassian committed to a 15-year lease of the office space demonstrating their conviction in the role of office in their way of working. Atlassian is a leader in distributed working, being well-known for its Team Anywhere policy, which empowers its people to successfully collaborate no matter where they are located. However, launching a project of this size and complexity during the pandemic was challenging with several of our key project partners based internationally – such as lead architects SHoP who are based in New York. As was necessary during the pandemic, we learned to adapt our communication and collaboration practices to this virtual-only environment.

HM: What is innovative about the building? At what point did Dexus come in, alongside the New York architects SHoP and Sydney architects BVN?

PM: Dexus came on to the development shortly after SHoP and BVN won a design competition to be appointed joint architects. The project ambitions were in the initial stages, with sustainability targets and concept designs underway. One of the most innovative features of the building is the reimagining of the air conditioning system. We have created multiple zones within the building ranging from 100% naturally ventilated through to traditional airconditioned spaces and introduced ceiling fans throughout. Open office areas are provided with single pass primary air to provide higher levels of indoor environment quality coupled with the incorporation of thermal comfort control for best-in-class conditions for office areas. This allows us to broaden out the temperature range that the building can operate in, while increasing comfort for occupants and improving energy efficiency. Atlassian Central is leading the way in low carbon construction and sustainable initiatives, including 50% reduction in embodied carbon in construction and 100% renewable energy from the first day of operation. Hybrid timber construction is a key differentiator for Atlassian Central, which will be the tallest hybrid timber commercial tower in the world once complete. The use of timber in construction will play a significant role in the reduction of the upfront embodied carbon for the development to achieve its 50% reduction target. The timber will also contribute to a positive occupant experience, providing a warmer internal environment and a smell that evokes feelings of relaxation and comfort. The building's amenities will incorporate touchless principles throughout – which is particularly apparent within the bathroom design.

HM: How much will Atlassian itself occupy? I guess the minimum space for other tenants would be one of the four-floor "habitats" with its own little open garden?

PM: Atlassian have committed to a 15-year lease for the building. However, the building has been designed with flexibility in mind, meaning it can easily be adapted for different uses and workplace needs in the future.

HM: Can you tell us how the YHA collaboration came to be? What's the rationale for having a hotel as part of the development?

PM: The YHA Railway Square property, which is now the site for Atlassian Central, had been operating for 18 years providing accommodation as YHA Railway Square in the heritage-listed former parcel shed. In partnership with co-owners, Atlassian and Dexus, the YHA will become an integral part of Atlassian Central within the Tech Central Sydney precinct. With five storeys and 480 beds, along with cafes, restaurants, and co-working spaces, the YHA at Atlassian Central will be a game changer for YHA Australia and will add vibrancy to this mixed-use precinct. This development signifies YHA's venture away from youth hostels into the hotel space. This facility will have the amenity and operations of a hotel, tailored to the younger 'digital nomad' demographic who are combining work with adventures in other countries. In this way there will be a natural synergy between YHA's guests - who are part of an international tech-savvy community - being co-located within a dynamic tech hub around Central Station and Railway Square in Sydney.

HM: How does it sit in Tech Central?

PM: The Atlassian Central development sits at Central station, at the gateway to Tech Central. Tech Central stretches from Central Station to Camperdown and across to Everleigh, encompassing several universities including University of Technology (UTS) and University of Sydney (USyd). We are really excited about the role Atlassian Central plays within Tech Central. Backed by Australia's most successful tech company and the NSW Government, we

PREVIOUS & ABOVE The Atlassian Central development sits at Central station, at the gateway to Tech Central.

have the opportunity to bring technology related companies into Sydney's premier education precinct. Working closely with UTS and USyd we will create an ecosystem to support the next generation of innovation. The precinct has the potential to super charge the growth of ideas, products and innovation in the Australian economy.

HM: And the aspect of "Designing with Country" – how does that work out?

PM: A Designing with Country report was completed at the commencement of the design process. This provided us with information about the First Nations interaction with the site and what is significant about the site to them. These themes have been intentionally captured by the architects, landscape architects and heritage consultants in elements of the building fabric, public domain and the landscape. A public artwork by renowned indigenous artist Brook Andrew had been developed to be installed on the external core of the building. The artwork conveys the six Aboriginal seasons, celebrates the dreamtime storytelling, and showcases how Aboriginal communities used the constellations and storytelling to guide their paths through the landscape.

HM: In sustainability: reducing embodied carbon, renewables and low energy – how far have you got and how important is that in your leasing?

PM: We are not undertaking any leasing activity for this building, as Atlassian have committed to a 15-year lease for the office space. We are on track to achieve the set sustainability targets of 50% reduction in upfront embodied carbon and 50% reduction in operational energy (compared to a conventionally operated building). The formal rating systems, including 6 Star Green Star, Platinum LEED Rating and Platinum WELL ratings, are currently being finalised. We are excited by the opportunities this project presents to reimagine the way office buildings are developed and respond to the increasing need to reduce carbon intensive activities. Sustainability is at the heart of this development, and we believe the innovation from its design and construction will be recognised at a global scale.

Sustainability is at the heart of this development, and we believe the innovation from its design and construction will be recognised at a global scale.

BELOW Royd Clan House, John Gollings.

Conversations about Sustainability

WORDS STEPHANIE STEFANOVIC

In this Q&A, we feature short excerpts from interviews with sustainable architects Nadine Samaha, Talina Edwards and Steffen Welsch. We discuss their favourite projects, challenges, inspiration and much more.

ABOVE LEFT TO RIGHT Nadine Samaha, Steffen Welsch, Talina Edwards.

NADINE SAMAHA, PRINCIPAL ARCHITECT AT LEVEL A-K

Do you have a particular niche that you are known for in the sustainable design space?

Yes – I am particularly known for my work and research on biophilic, ecological and regenerative design. As an ESD lecturer at RMIT, I empower students to provide them with tools to highly design energy efficient buildings. As a sustainability advocate, I encourage architects in educating the public and assist in drafting sustainable policies.
And as a practitioner, I try to apply everything I teach about passive design principles and energy efficiency.
I often incorporate sustainably sourced timber using Design for Manufacturing & Assembly (DfMA). This efficient construction method improves the energy efficiency of the building, reduces construction time and materials waste. Further to the biophilic properties of timber, it sequesters carbon which makes it an ideal choice in some projects.

Is there a sustainable project you're particularly proud of?

The Royd Clan's Autonomous House was a special project as it allowed me some freedom to explore different construction methodology and a more daring design form that is not constrained by surrounding structures. The self-sufficient house/work studio/ farm relies on harvesting its own water, generating its own energy, and even generating an income from the farm's native flower business. Over 3,000 native trees were planted to further sequester carbon and to reduce my client's family's carbon footprint.
Some passive design principles that were applied:

1. Location, context, and climate zone: We went beyond just the physical and ecological analysis of the site by taking inspiration from the First Nations mythology and stories of the area.
2. Solar geometry, daylighting and shading strategies: Early daylight simulations assisted in orienting almost all the spaces in this cluster design to face not only North but also to enjoy the sun movement during the day.
3. Natural ventilation and wind studies: Early simulations on Rhino software confirmed that a cluster design would assist better in withstanding the strong wind. Natural cross and stacked ventilation was facilitated to cool the home in summer, backed up by fans and a split unit system for extreme heat.
4. Indoor air quality, humidity, and condensation control: A breathable membrane was used externally over all the building envelopes.
5. High-performance building envelope: High R-values were specified along all the building envelope, avoiding any thermal bridging. Thermally broken windows with low e-double-glazing reduced heat/ cold transfer, combined with blinds and deciduous trees for shading. The thermal mass high index of the slab, along with the high density of the Compressed Laminated Timber (CLT), improved the comfort of the house.
6. Outdoor and indoor connections: The house was designed as a cluster of pavilions to enjoy the views and to connect to the ruins of the original Victorian house. The connectors between the pavilions were designed to have passages full of greenery, including a large cut in the concrete slab in the living area to allow four trees to grow inside.
7. Optimal layout design: The pavilions were designed to emulate the existing boulders on the site. Angled walls were used to reduce the extent of the concrete slab and to create a better connection with the upper mezzanine level and the surrounding landscape.
8. Energy efficiency: The house is completely off the grid and runs on over 15.75kW solar generation system feeding over 30.7kWh lithium-ion battery storage units. The system rarely requires a backup diesel generator, which kicks rarely now for short periods during winter.
9. Water efficiency: An 80,000-litre water tank provides for the residents' needs. Greywater is also used for flushing toilets and an efficient septic tank is provided with very low maintenance. Four existing dams provide for the farm's irrigation.
10. Local contractors: Most of the contractors, tradespeople and craftsmen were sourced locally, fostering a sense of community and supporting the local economy.

What is the biggest challenge you face as a sustainable architect?

One of the biggest challenges I faced early in my career was discussing the initial high costs of certain sustainable solutions with my clients. It was important to explain to them how certain decisions could lead to long-term savings and have lesser environmental impact. For example, how increasing the R-value of insulation in the building envelope can reduce reliance on mechanical heating and cooling, resulting in significant energy savings. Similarly, how specifying materials with high thermal mass can regulate the temperature, the benefits of transitioning from gas to electric systems, using double glazing, and installing renewable energy sources like solar panels used to be difficult to justify due to their higher initial costs.
However, these days, all my clients are aware of the impact of climate change, well educated, and actively request better sustainable solutions for their buildings.

TALINA EDWARDS, DIRECTOR OF ENVIROTECTURE

Do you have a particular niche that you are known for in the sustainable design space?

We're experts in Passivhaus design, keen supporters of the Living Building Challenge and focus on using sustainable materials and practices. Sustainable design is not about perfection, but always asking "what does good look like?", "what are the impacts of our decisions?" and considering the legacy we're leaving for future generations.

Is there a sustainable project that you're particularly proud of?

All of them have their own story! Recently our Huff'n'Puff Haus has been receiving a fair bit

of attention and accolades as it's a Certified Passivhaus Premium home (it harvests more solar power than it uses). It's also healthy and comfortable indoors all year round despite the extreme outdoor temperatures and conditions, it hardly uses any heating and cooling so its very energy efficient, it's all-electric, was designed for ageing-in-place in a bushfire-prone area, and it has lower upfront carbon due to the walls being made of straw bales!
Oh, and did I mention that it also has biophilic beauty that ensures it's connected to the landscape, is light and bright and has a lovely soulful feel? Our clients are regenerating the land with indigenous species, and planting orchards and substantial veggie gardens too.
This project illustrates a holistic approach to sustainable design, which could also be considered a 'regenerative' development, as it's aiming to do "better", not just "less bad".

What is the biggest challenge you face as a sustainable architect?

We're in a climate and biodiversity emergency… The biggest challenge is that while this is generally acknowledged now, there is currently not enough urgent action taking place. As a small practice, we can only do so much, which is why we also spend our time advocating for these issues, helping educate the industry about the solutions, and continuing to lead by example. It is up to each one of us to help create a better future.

What sustainable design features do you think should be more prevalent in Australian architecture?

For an industry that is all about "growth" and development, there is a contentious idea that we all must embrace – and that's about not always building something big and new. Globally we are over-consuming much more than the planet can sustain. We need to use less stuff. We need to build less, and retrofit the buildings we already have, and consider living with smaller footprints. With a growing population and a housing crisis, we of course will need new buildings – and we must ensure these are focused on quality, resilience and futureproofing so they are fit for purpose many years into the future.

Are there any designs that have inspired your work as a sustainable architect?

Nature is my muse!

STEFFEN WELSCH, PRINCIPAL OF STEFFEN WELSCH ARCHITECTS

How do you define 'sustainability' and how does this manifest itself in your designs?

There is a definition by the UN World Commission on Environment and Development from 1987. It defines sustainability as meeting "the needs of the present without compromising the ability of future generations to meet their own needs".
This is of course very broad, but for us it provides a guide on how to work through a project. We start with the bigger picture and then work into the smaller details, and the definition of sustainability informs our methodology: At each stage of the project, we evaluate our design and ask, "does this meet the definition of sustainability?" We ask, "how will the construction affect the environment of others beyond the project site, does the design meet people's needs over say the next 50 years, and of course, how does the end-of-life affect our environment?"
This can be daunting and exciting at the same time, but if we relate this back to our projects, it helps us to set parameters that drive the design. They can vary but of course there are constants: Space efficiency, passive solar design, and biodiversity impacts.

Is there a sustainable project that you're particularly proud of?

In general, you are always proud when your ideas work and can make an improvement to peoples' lives. I experienced this first-hand over a few years with my own house – a renovation and extension to what was an old cottage with a derelict lean-to. It hasn't been photographed or published but provided a comfortable home with an identity that the family could grow into. It is significantly smaller than an average house but feels generous. We ended up increasing the size of our backyard and with our neighbours we decided to open the back fence, making it easy for our children to roam and connect with the other children in the neighbourhood. Room layouts are carefully considered, and there is no wasted space, hallways are all eliminated. The home is designed around a central communal room that can easily accommodate 30 people. It has breakout spaces for studying, retreating, and sleeping. The house is as comfortable for six people as it is for two.
Being a passive solar design with large north-facing windows, we understood how important the building fabric is for comfort and performance. Walls are thickened up to increase insulation, doors and windows are high performance, curtains provide additional insulation, and sun shading is integrated and installed to provide maximum protection from both sun exposure and from radiant heat, cross ventilation works perfectly.
One of the nicest aspects is that we can actively operate our home rather than rely on mechanical systems for comfort. It makes us as occupants conscious of the benefits of embracing natural elements like light, the warmth of the sun, the benefits of natural ventilation and fresh air.

What is the biggest challenge you face as a sustainable architect?

In our experience as a sustainable practice, one challenge is the lack of sustainability regulations especially at local council level. It takes too long until a problem turns into a policy that – some years later – becomes a regulation. Council's support of sustainable design therefore is inadequate and can lead to fighting unnecessary battles. Sustainable design in general, needs to be understood and supported more at any level of government. We are talking about a climate emergency and in an emergency, you need to act fast to implement the procedures you were taught.

THIS LEADS TO THE NEXT POINT.

One other big challenge is insufficient education and training, especially at tertiary education level. Sustainability is still seen as an add-on or feature. This is the equivalent to saying, "today's Australian Open match features a tennis ball". Sustainability must be considered integral, and it would be great to see students coming out of university as sustainability experts.

Are there any designs that have inspired your work as a sustainable architect?

There are many, but if I could name two, there is the transformation of three social housing blocks in Bordeaux by French architects Lacaton & Vassal. Instead of tearing them down, they renovated and extended them with generous wintergardens on each floor. This significantly improved amenity and comfort, provided new social opportunities, and generated a much lower carbon footprint compared to demolition and new build.
As a Melbournian, on a local level I admire the Heller Street Park and Housing Development by Six Degrees Architects. An old tip in Melbourne's North was bought by a group of architects and friends, the site was cleaned up, and ten townhouses were built. The 'leftover' land was turned into a park that was given back to the public and can be used by the local and wider community. The private outdoor areas are not fenced off and connect to the public park. Of course, these buildings are smartly designed and well executed. The entire development demonstrates how we as architects can exercise our duty to our community that we are part of.

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2024 SUSTAINABILITY AWARDS WINNER SINGLE DWELLING - NEW

Holocene House | CplusC Architects

PHOTOGRAPHY MICHAEL LASSMAN/RENATA DOMINIK

Holocene House is like being in nature. Canopied in plants, water flows through like a rainforest creek, and every room opens to the outdoors.

Balancing residents' health and comfort with environmental performance, the carbon-positive home is the first in Australia to be certified by the international Active House Alliance.

To enter, you step from stone to stone, ascending beside a cascading waterfall to a dramatic living space poised around a natural swimming pool. Cleansed by a biofiltration system of polishing ponds, reeds, charcoal and pebbles, the constant movement of water creates a series of playful and rejuvenating spaces for family life, prioritising nature and the outdoors. Paddle your feet, swim, float, or lounge in a cargo net – shaded by a veil of leaves, you're part of a living light and soundscape.

In designing and building Holocene House, CplusC showcased what happens when we invest in sustaining life and leading change rather than building bigger and more. The home will soon generate more energy than was used to create and operate it. Regenerative thinking guided every aspect of design and construction, from the innovative use of low-embodied-energy spotted gum Shou Sugi Ban for exterior cladding to the natural swimming pool and extremely low-toxicity finishes throughout.

The home is BAL-29 rated and climate resilient with a photovoltaic system generating 10% more energy than the family needs and an underground rainwater tank. The natural swimming pool is a reservoir, recycling and cleaning water to nurture coastal ecology – and our friends the bandicoots.

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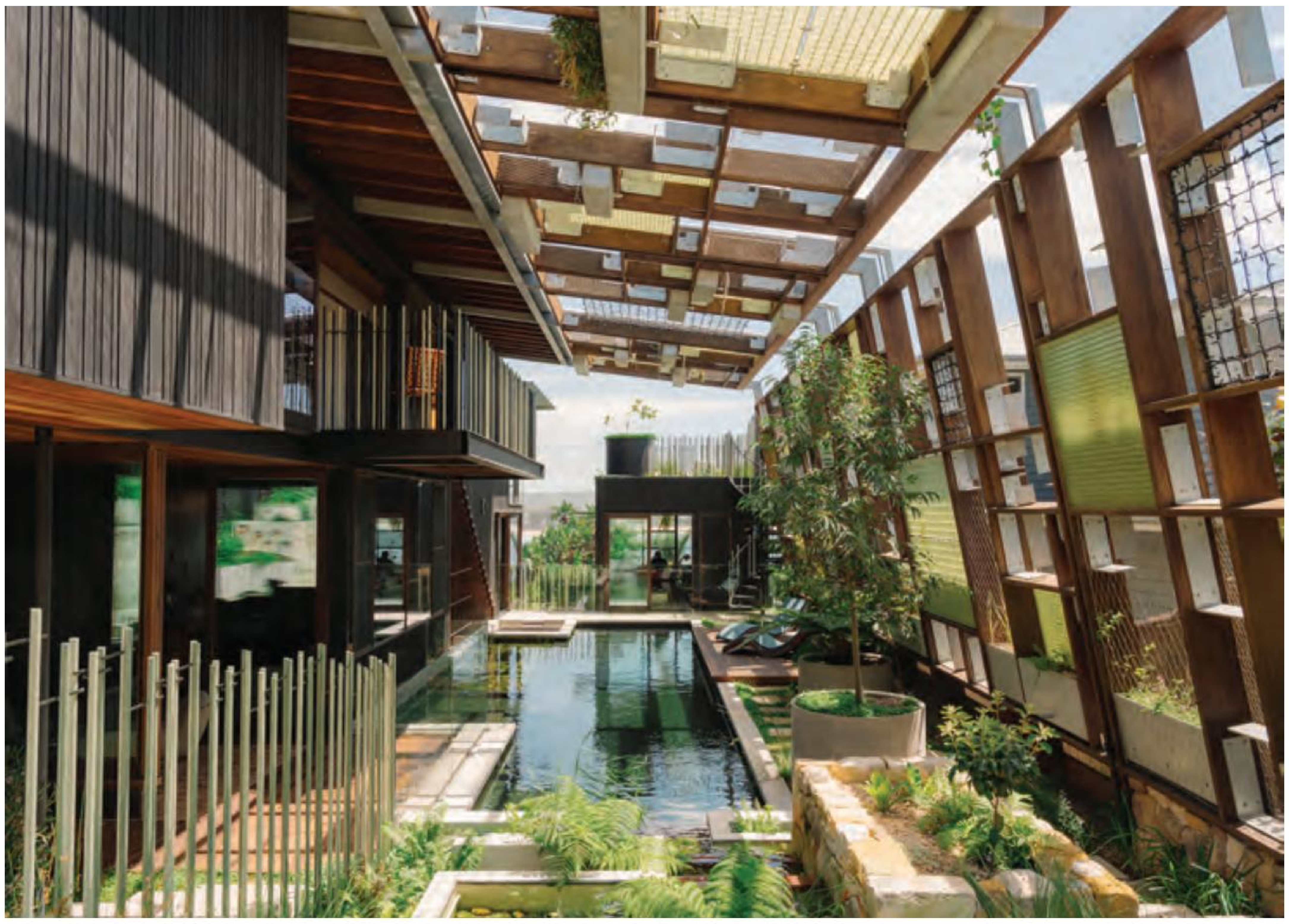
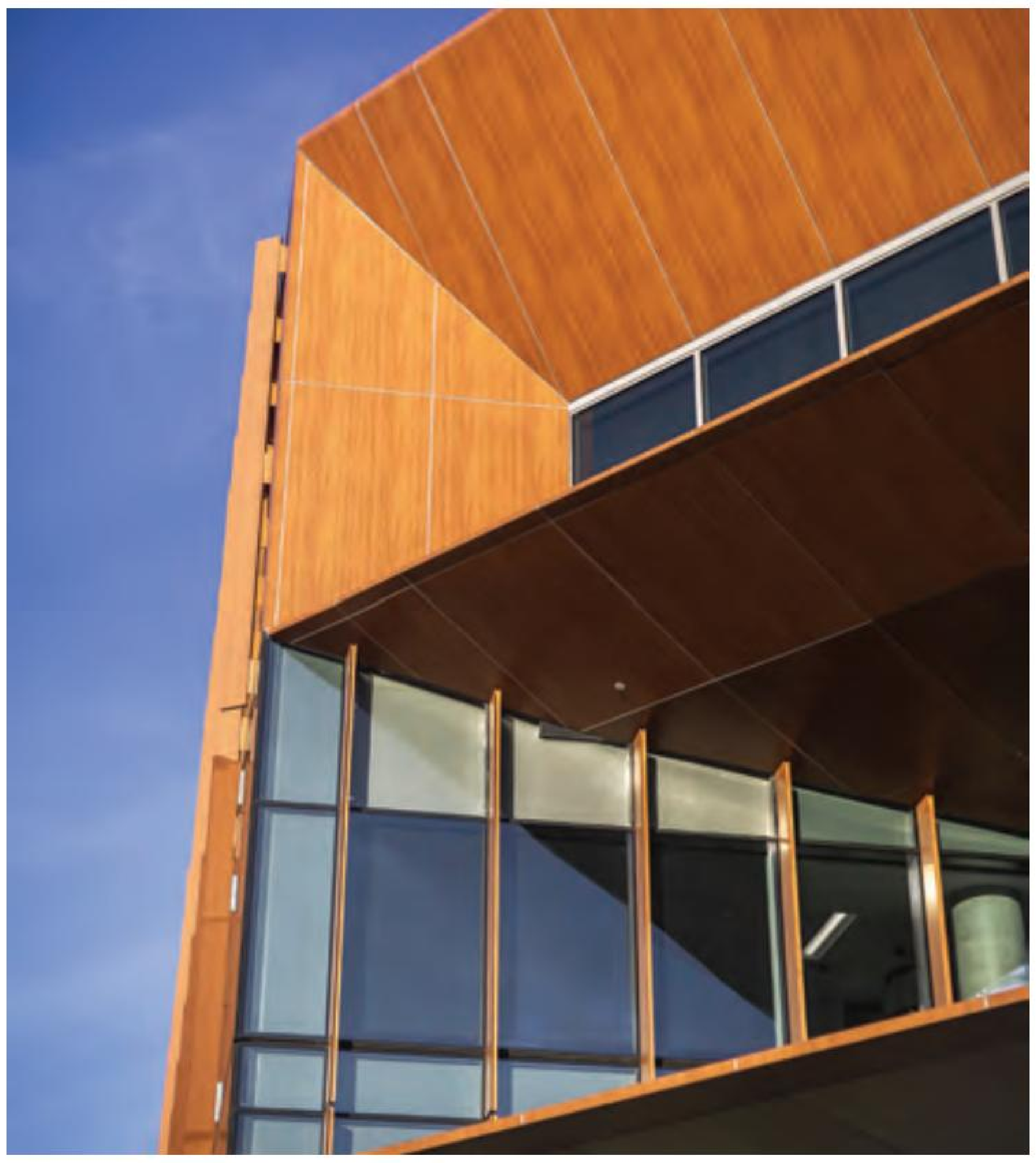


PROJECT CREDITS

Project Name Holocene House
Design/Architecture Firm:
CplusC Architects + Builder
Project Location: Sydney
Project Lead/Director: Clinton Cole



Navigating Sustainability – Key Considerations when Selecting Aluminium Cladding

Given the various attractions of aluminium cladding – which include everything from visual appeal, cost-effectiveness and low maintenance requirements to durability, ease of installation, and more – its continued popularity, for a range of applications, is understandable.

That said, it is important to note that aesthetic and functional benefits such as these are only part of the equation. As is now broadly accepted across the construction sector, product choice should also involve environmental considerations. Given the urgency of the climate change challenge – and the built environment's status as the largest global emitter of greenhouse gases – architects and designers need to be part of the solution.

When specifying aluminium cladding, they need to not only consider the strength and aesthetic appeal of the various product options, but also the raw material extraction methods used to produce them, whether their manufacture includes recycled material, and so on. And they need to be aware of what will happen to those same products at the end of their service lives.

This White Paper, titled Navigating Sustainability – Key Considerations when Selecting Aluminium Cladding, examines the environmental credentials of aluminium cladding. Beginning by identifying various products of this type available here in Australia, along with their various strengths and weaknesses, it goes on to explain the key variables that contribute to their environmental impact.

Outlining the life cycle stages of aluminium cladding products – from the 'Product', 'Construction' and 'Use' stages to the 'End-of-Life Stage' and 'Next Product Phase' – this paper explains why Life Cycle Assessments are the surest way to measure the environmental impacts of these products.

It goes on to outline the ways for specifiers to identify products that have undergone these life cycle assessments and can therefore be considered genuinely sustainable. It defines the term Environmental Product Declaration (EPD) and highlights the Environmental Certifications Good Environmental Choice Australia (GECA),

Global Green Tag (GGT), Climate Active Carbon Neutral – that those seeking sustainable cladding options should keep an eye out for.

Then finally, this White Paper looks at recycling as a key to the environmental credentials of aluminium cladding. It explains why the best products of this type have a strong role to play as part of the circular economy, in which waste is minimised and regeneration is a key societal goal.

Network Architectural is focussed on serving the construction market with high quality façades and architectural finishes. On top of this, as its status as the exclusive Australian distributor of key cladding brands like ALPOLIC™ attests, the company ranks environmental sustainability among its top priorities.

A brand of Mitsubishi Chemical Infratec Co., Ltd, ALPOLIC™ boasts over 50 years' experience in the development of aluminium composite panels. Having reduced the greenhouse emissions associated with production of its composite panels (at its facilities in Japan, the US and Germany) by 20% since 2017, ALPOLIC™ has further committed to cut these by a further 30% by 2030.

Durable, EPD certified, and designed for easy reuse, ALPOLIC™ NC/A1aluminium composite panels represents the future of façade innovation.

Network Architectural

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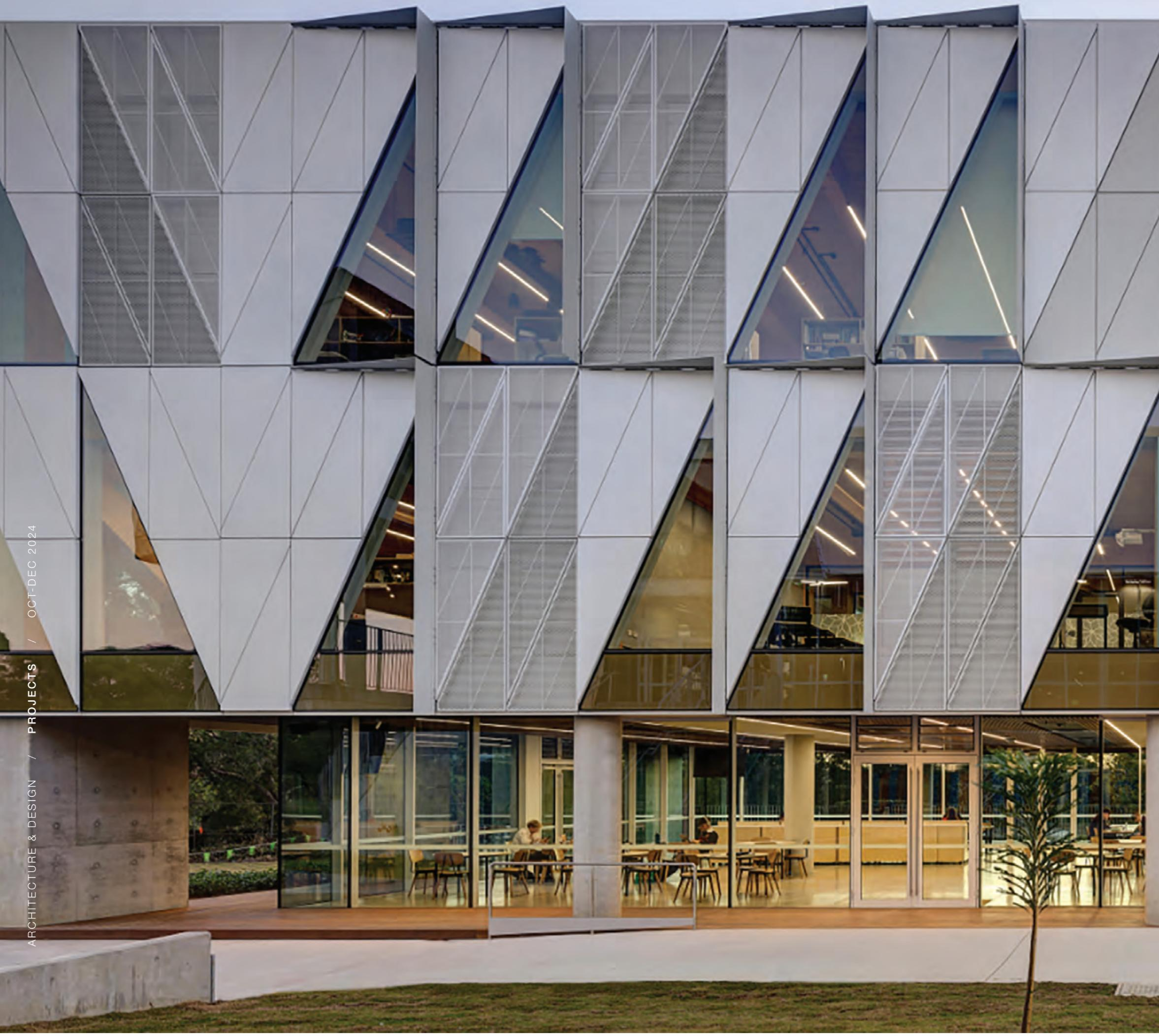
bit.ly/Network-Architectural-CS-ADQ4-2024

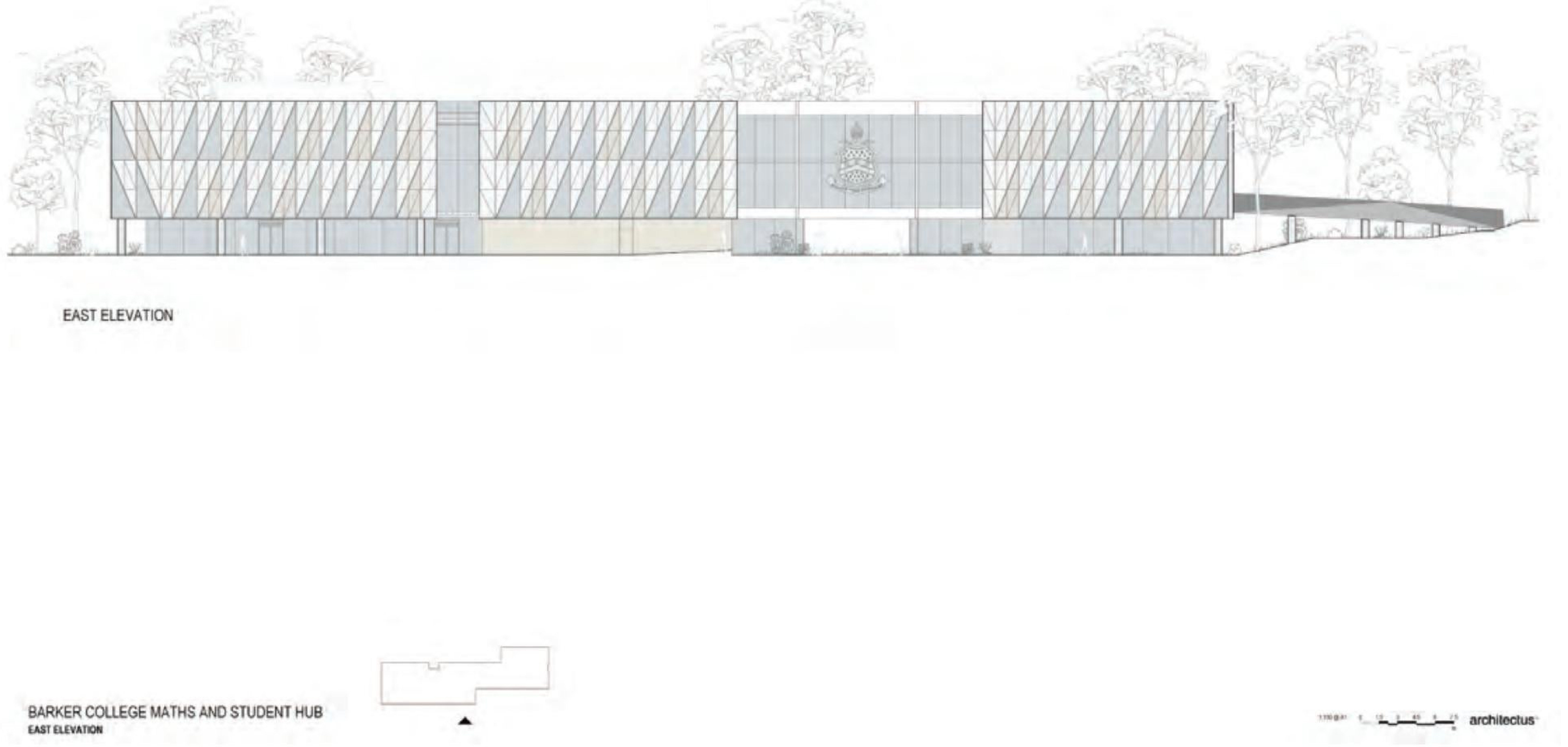


2024 SUSTAINABILITY AWARDS WINNER EDITOR'S CHOICE - SOCIAL & COMMUNITY OUTCOMES

Barker College Maths Hub | Architectus

Barker College is an independent, Anglican co-educational school located on Sydney's North Shore.

PHOTOGRAPHY BRETT BOARDMAN



From its inception, the school's Maths Hub was a collaborative endeavour involving students, faculty, administrators, and design professionals, all sharing a commitment to sustainability and innovation.

Driven by their collective ambition to leave a positive and lasting legacy, students made a significant impact by advocating for innovative solutions that would make the Maths Hub a model of environmental stewardship.

Designed with a holistic approach to sustainability, the Barker College Maths Hub combines biophilic design principles, passive environmental strategies, on-site energy generation, and responsible material selection to create a learning environment that is in harmony with nature.

This future-focused learning environment prioritises a time-honoured sustainable design philosophy, working with the natural world to reduce environmental impact rather than relying on expensive solutions for meeting high operational demand. The Maths Hub strategically draws on the elements – including solar, wind, and air – to create a climate-conscious, resilient building.

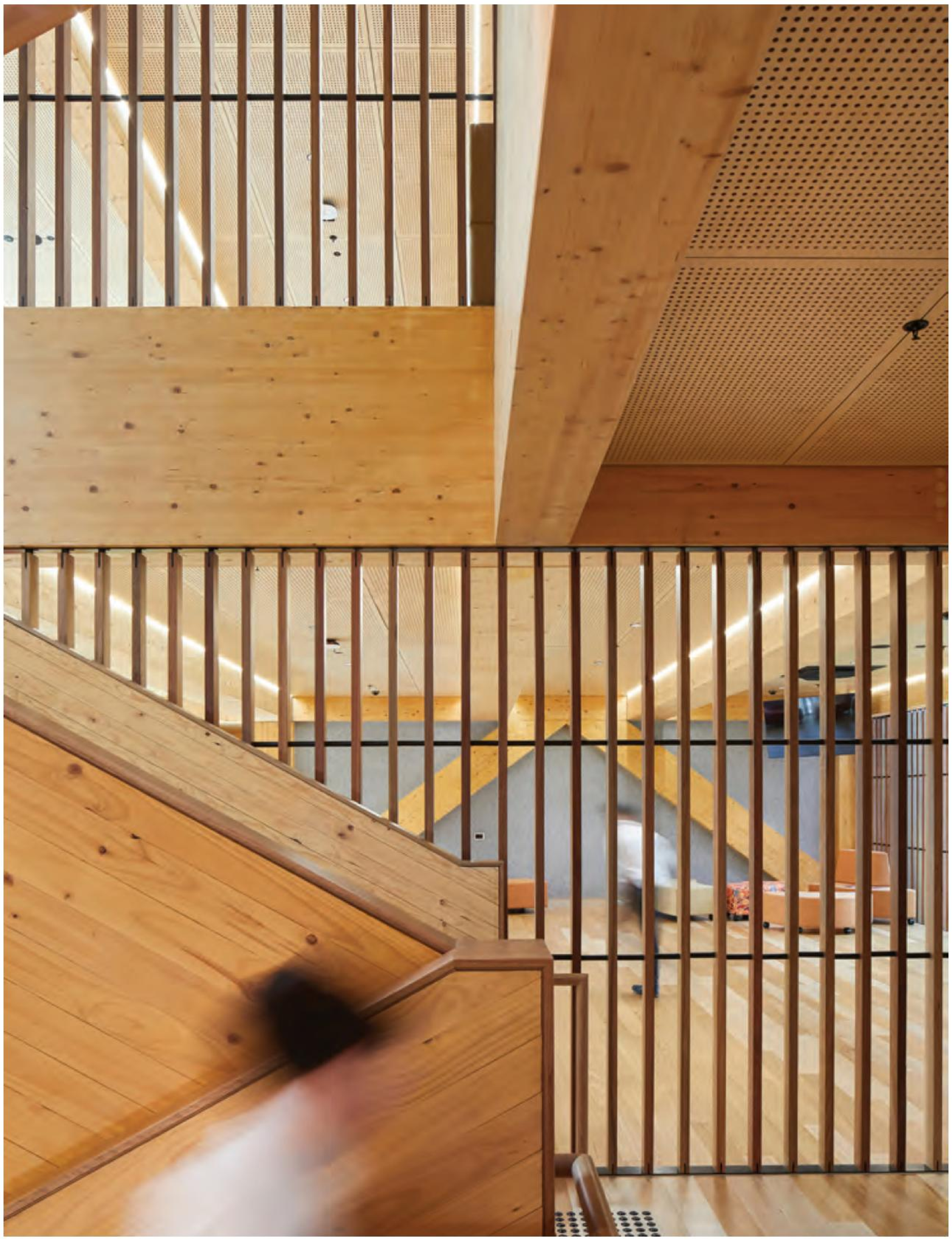
Bringing the very best of nature into the built environment, the sustainably-sourced mass timber structure is not only organic and renewable but also sequesters carbon, offsetting 780tCO2e – equal to 18 years of the Maths Hub's operational emissions.

In each of the 23 classrooms, the exposed timber structure, and organic finishes, coupled with green views over tree canopies, enhance occupant wellbeing through a connection to nature. Users are empowered to control the natural light and fresh air coming into their learning environment, creating bright and inviting spaces that can promote concentration, increase productivity, and even reduce stress through biophilia.

Thanks to innovative architectural design, the Maths Hub creates an environment where students can thrive academically, socially, and physiologically, within a building that respects and honours the natural world.

PROJECT CREDITS

Architect Architectus
Photography Brett Boardman
Location Hornsby NSW



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HV.Hotel | Hip V. Hype with Six Degrees Architects

WORDS HIP V. HYPE

HV.Hotel exists on HIP V. HYPE's strong belief that the buildings we choose to live in can drive the positive impact our cities deserve.

HV.Hotel is 100% electric, powered by 100% renewable GreenPower electricity. Seasonal Six is our handwritten quarterly guide to eating, doing, relaxing, and exploring the local neighbourhood, provided to all guests for a genuine locals' experience.

HV.Hotel is designed to enable guests to live sustainably, more conveniently. It is our hope that this experience will build a community of people empowered with the knowledge and the belief to make a tangible impact, inspiring steps, big or small, towards a more sustainable future.

Since opening in 2023, over 300 guests have experienced HV.Hotel, with over 210 nights booked, meaning 300 more people have experienced the benefits of gas-free, reduced-footprint, more sustainable living.

The site's location adjacent to the light rail and a busy intersection presented acoustic challenges. Fortunately, energy efficiency and acoustic performance are interrelated, with high performance windows and doors along with increased levels of insulation doubling to provide very high levels of acoustic performance.

Installation is critical to ensuring a building performs as anticipated, particularly when fitting plays a vital component in airtightness and performance. During construction, HIP V. HYPE facilitated a workshop between our double-glazed Tilt and Turn window supplier, BINQ; our builder, Ironside and their sub-contractors to ensure windows were installed correctly to support maximum performance.

We installed an Energy Recovery Ventilation (ERV) system to support the building's high-performance, airtight envelope. This system ensures a constant supply of fresh, filtered air whilst reducing heating loads in cooler months. As the adoption of ERV in the Australian apartment market is limited, our mechanical services engineer and sustainability team worked together to design the most suitable system to meet the project's performance requirements and spatial constraints. HIP V. HYPE is undertaking post-occupancy research to track its performance, using the data to refine specifications for future projects.

Guests are invited to experience how the ideas and products featured in HV.Hotel can be seamlessly integrated into their everyday life, breaking down the perception that living sustainably can't be beautiful, efficient and easy.

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201 Ferrars Street

PROJECT CREDITS

Design/Architecture Firm: HIP V. HYPE
Project Location: 201 Ferrars Street, South Melbourne VIC 3205
Project Lead/Director: Liam Wallis, HIP V. HYPE
Collaborating Design/Architecture Firm: Six Degrees Architects
Photography: Kate Shanasy

East Brunswick Village: Sustainable urban renewal reinvigorates Melbourne’s industrial inner-city precinct

The dynamic volumes of the recently completed East Brunswick Village (EBV) emerge from Melbourne’s inner-city locale as a powerful statement on sustainable urban renewal. Designed by JAM Architects and developed by Banco Group, EBV has transformed a once-derelict industrial site into a vibrant “20-minute neighbourhood” that revitalises the concept of city living.

By thoughtfully integrating residential, commercial, and recreational spaces, EBV creates an immersive environment where people can reside, work, and engage in leisure activities within a short walking or cycling distance. With restaurants, retail spaces, a gymnasium, allied health services, and even a boutique cinema impeccably integrated with the residential sphere, this mixed-use community strikes the perfect balance between connection, comfort and privacy, re-imagining the idea of a traditional village model in the urban context.

Naturally, creating a thriving, sustainable community like EBV required careful consideration. It was essential to balance ample outdoor space and amenities that foster a sense of community with a future-forward design that would accommodate the evolving needs of its residents for years to come. In addition, the project team’s ESG aspirations were central to this architectural endeavour, to ensure the development would achieve the desired standards, minimise environmental impact, and promote residents’ well-being.

Through a combination of thoughtful design and innovative solutions, the project team has created a sustainable blueprint for urban living that fosters a sense of community and prioritises both its residents and the environment.

Reflecting the project’s sharp sustainability focus, Stage 2 has already achieved operational carbon-neutral building status through a combination of offsets, water conservation, material selection, and focus on indoor environmental quality. Each apartment has been designed to meet BADS and achieve a 7.5-star average NatHERS rating, and all dwellings are well connected to the outdoors, maximising natural light and ventilation, reducing energy needs, and enhancing connection with the surrounding landscape.

Another example of EBV’s commitment to sustainability was the decision to implement an all-electric approach in all Stage 2 and 3 apartments. The visionary move – realised in collaboration with Electrolux – was made years ahead of mandated gas restrictions, demonstrating the project’s outstanding foresight. The apartments have been equipped with a suite of Electrolux kitchen appliances designed to elevate the resident experience while minimising environmental impact. Comprising innovative and energy-efficient dishwashers, induction cooktops, combination microwave ovens, and multifunction ovens, the selection of appliances fuses superior performance, convenience and flexibility with enduring sustainability features and seamless integration.

The thoughtful incorporation of Electrolux appliances reflects EBV’s pioneering vision for sustainable metropolitan living. By seamlessly blending ingenious design, environmental leadership, and a strong sense of community, EBV demonstrates that harmonious coexistence between urban lifestyles and sustainable aspirations is not only achievable but essential. As cities worldwide face the pressing challenges of population growth and climate change, EBV sets a new benchmark for multi-residential architecture that reintroduces the concept of a village as part of urban lifestyle to celebrate both people and the planet.

Electrolux

FIND OUT MORE
bit.ly/Electrolux-ADQ4-2024

2024 SUSTAINABILITY AWARDS WINNER BEST OF THE BEST & COMMERCIAL - LARGE

T3 Collingwood | Jackson Clements Burrows Architects

WORDS: JACKSON CLEMENTS BURROWS ARCHITECTS

T3 Collingwood aims to positively contribute to Collingwood's urban streetscape and sense of community.

The high quality 15-level commercial building provides an activated ground plane on Wellington St with cafes, restaurants, and other public amenities.

The design draws on this distinctive context to create a building comprising a 5-level brick and concrete podium with a 10-level lightweight mass timber structure perched above. The brick podium sleeves into its streetscape scale, while the glazed curtain wall tower above speaks to an emerging typology of residential/commercial buildings in the immediate surrounds.

A defining move was to align the northern façade of the podium with a heritage building to the east, creating a wider ground plane with a generous arrival and civic quality. The tower form above cantilevers over this setback to define an entry pathway.

The use of red brick in the podium, terracotta in the window shades and curtain wall shading fins in the upper façade creates a singular, confident colour block response. This honest, industrial, and robust material palette continues internally, with a palette of brick, galvanised metal, concrete and timber throughout.

The program resolution focuses on providing efficient, functional, and flexible floorplates with excellent access to light and amenity. Amenity includes ground floor food & beverage offerings and EOT facilities, with terraces created as the building form steps back progressively at higher levels. A warm timber aesthetic creates calm interiors, with strong biophilic connections nurturing a sense of occupant wellbeing not typically associated with high-rise office buildings.

Reflecting the objectives of developer and design team, the project's completion signals a shift to a new generation of carbon conscious commercial spaces.

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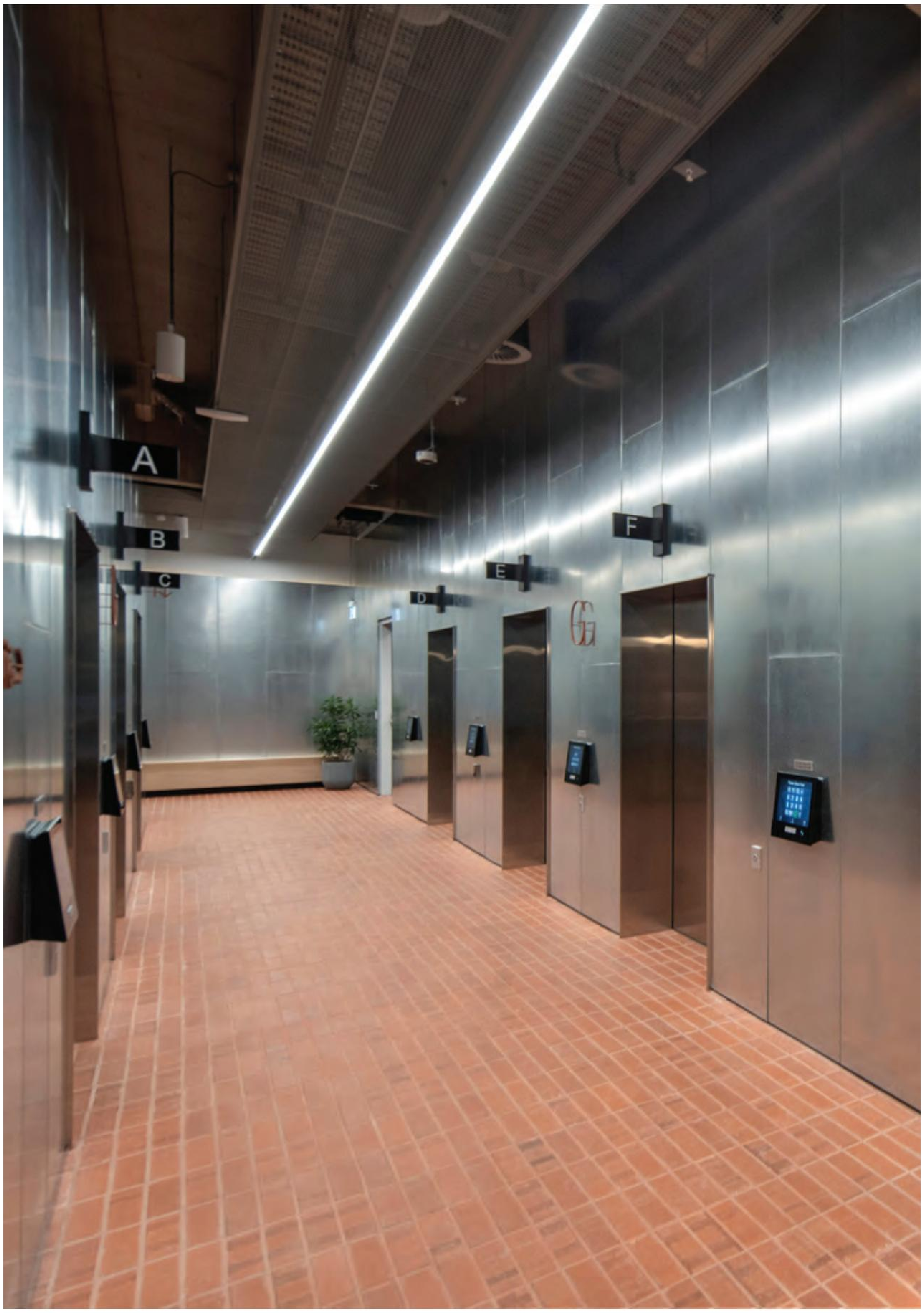

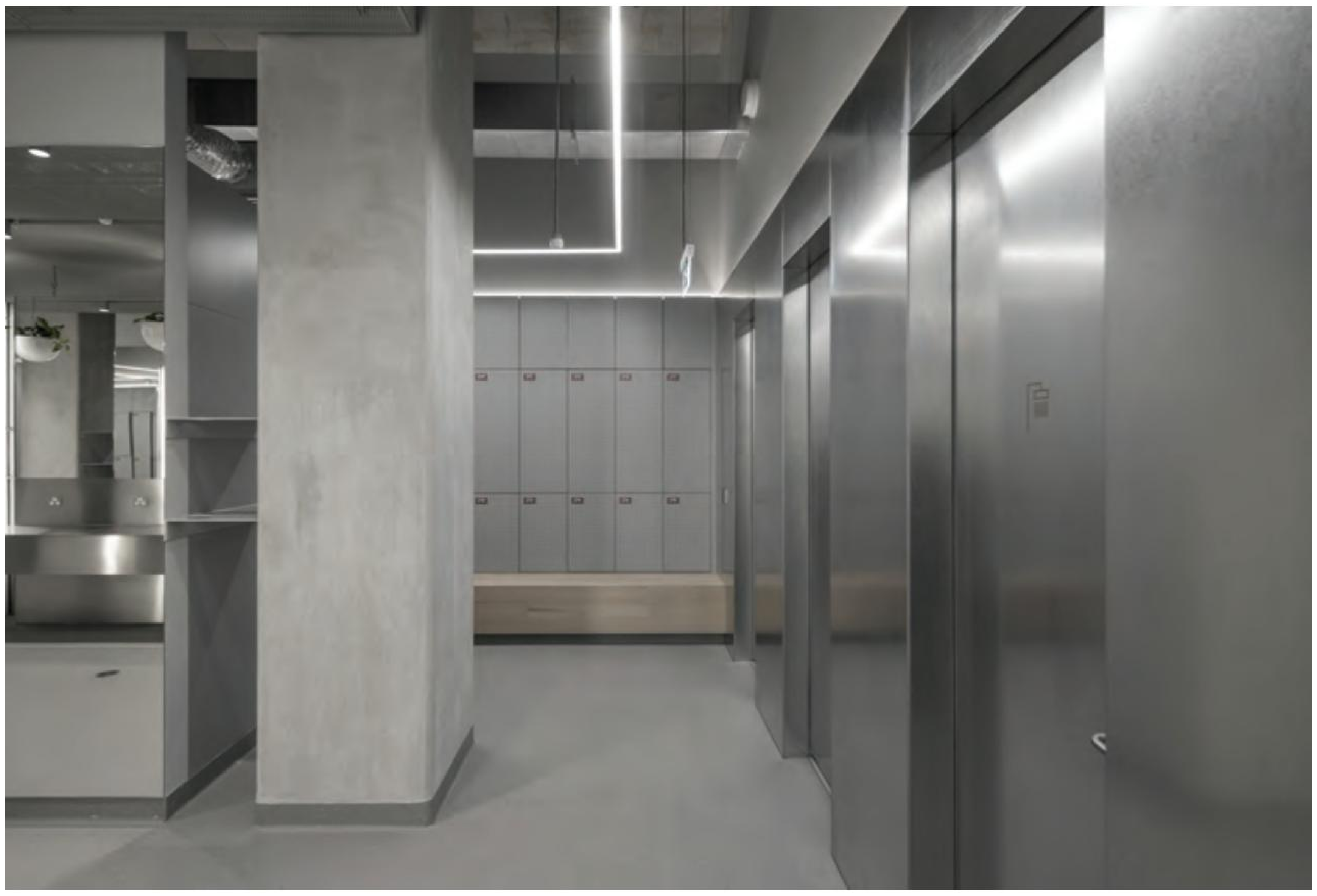

PROJECT CREDITS

Project Name: T3 Collingwood
Design/Architecture Firm: Jackson Clements Burrows Architects
Project Location: 36-52 Wellington Street, Collingwood 3066 VIC
Project Lead/Director: Graham Burrows
Photography: John Gollings, Tom Blachford

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2024 SUSTAINABILITY AWARDS WINNER INTERIOR DESIGN

Perth Workplace | Hames Sharley in partnership with Arup

PHOTOGRAPHY RICHARD STOKES

The workplace is spread across three levels within the new Westralia Square 2 development in Perth.

Arup engineers supported the base building design of the new building which has been built out of mass timber on top of an existing podium, leveraging the lightweight timber structure to maximise the potential yield from the established capacity of the structure.

Further, there is no thermal plant in this new building, with existing excess capacity being utilised and connected to.

Human health is central to Arup's design process and is factored into the initial site selection with requirements around access to daylight and views some of the first checks we undertake. The results are used to inform layouts of workstations and meeting rooms with 95% of regularly occupied areas required to have direct access to views.

Arup has produced a healthy indoor environment management plan to support a broad range of design and operational initiatives for the Living Building Challenge including pollutant removal through entry way design, toxic chemical free cleaning products made on site from eWater and scrutiny of all materials and products used which have the potential to emit VOCs and formaldehyde.

Arup will be undertaking a detailed lab test of the air quality within 6 months to verify the results.

Further, the WELL Platinum rating being pursued provides a significant number of further wellness initiatives across the specifics of the design and operation including access to drinking water, filtered water, wellness spaces, flexible workstations, first aid room and abundant plants.

The plants form the most obvious part of the biophilic design strategy that has been deeply implemented in the design process through a rigorous framework which involved all design team members and First Nations representatives. The resulting integration of a series of art works around the office adds to the experience.

PROJECT CREDITS

Design/Architecture Firm: Hames Sharley in partnership with Arup
Project Location: Perth CBD, Perth Australia
Project Lead/Director: Cameron McIntosh
Collaborating Design/Architecture Firm: Arup

The Base, Cobbitty.
Contemporary Dwelling a top Cobbitty Hill

Perched atop Cobbitty's hill, The Base is an outstanding contemporary dwelling that respectfully integrates into the expansive greenery of its stunning setting.

"With its sweeping views of agricultural crops and distant mountain tops, this once-vacant lot became the underlying basis of the project's core," explains Joseph Mammone of J Mammone Architecture.

While the site's inherent beauty yielded a magnificent backdrop for this wonderful residential project, it also presented a unique set of challenges. The architectural vision, centred around capitalising on the expansive views, demanded generous glazing, but the Cobbitty climate of high 30s in the Summer and Winter lows of 6-8 degrees – necessitated exceptional thermal performance.

The Series 424 CentreGLAZE™ Fixed Highlights were chosen for their exceptional thermal performance and ability to frame the landscape without compromising the home's energy efficiency. These large, fixed windows not only flood the interior with natural light and enable visual connection with the surroundings, but also maintain a comfortable indoor temperature throughout the year.

"The use of AWS windows and sliding doors, in particular the 704FBR sliding doors, allowed us to capture the amazing views whilst not impeding or interrupting the key frame," enthuses Joseph. "All windows and doors were double-glazed units with Low E Clear Argon-filled glass and were all designed to be recessed into the build fabric to create a seamless look and also have the robust concrete frame the views."

The strength and durability required to support the home's extensive glazing were achieved through the Series 450 and Series 626 Double Glazed Commercial Framing systems. Engineered to provide exceptional structural integrity, these robust systems boast a refined, minimalist aesthetic which contributes to the residence's unpretentious design language.

AWS
ARCHITECTURAL WINDOW SYSTEMS

FIND OUT MORE
bit.ly/AWS-ADQ4-2024

1
Room 04
Room 03
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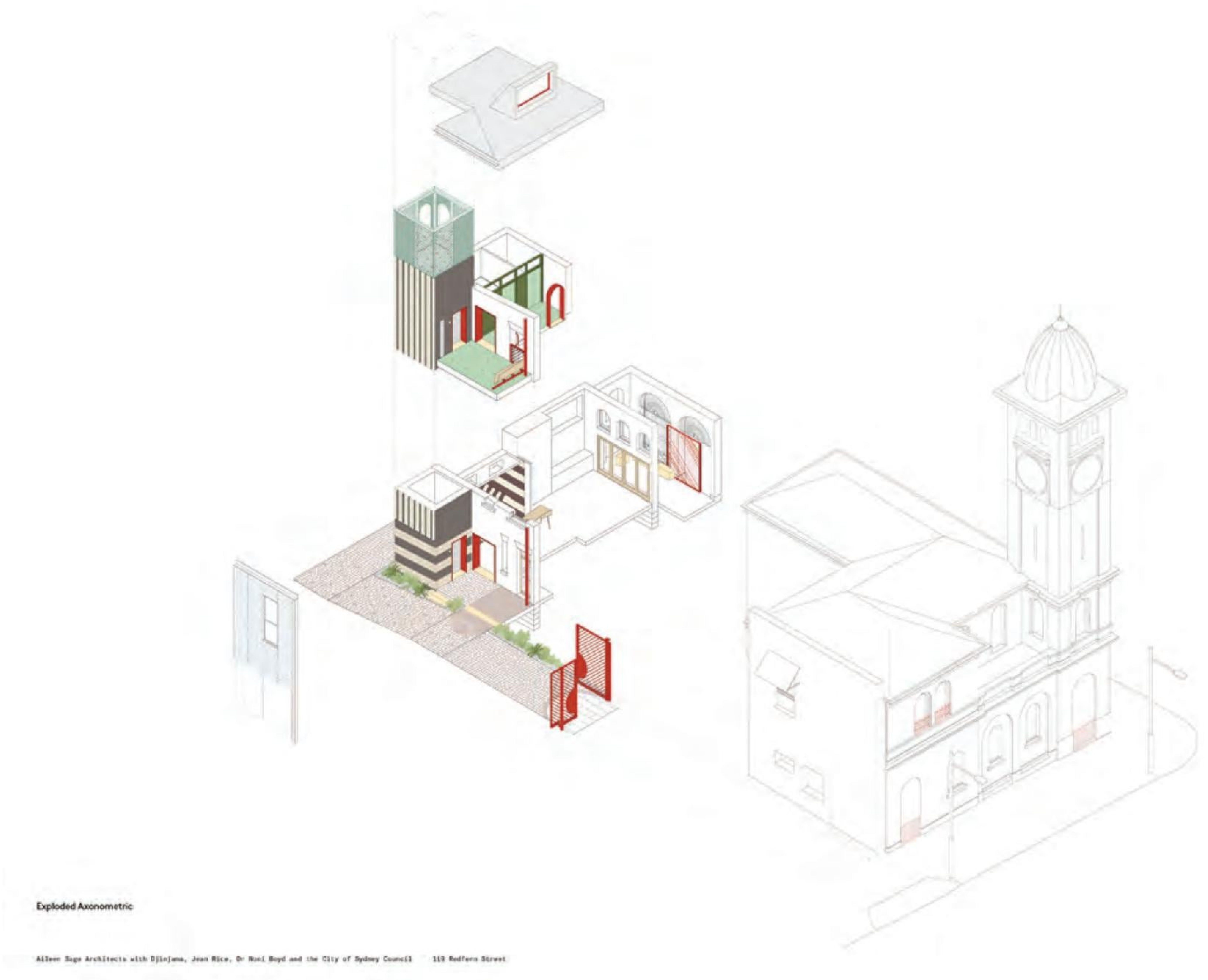
Room 02
Room 01
Reception

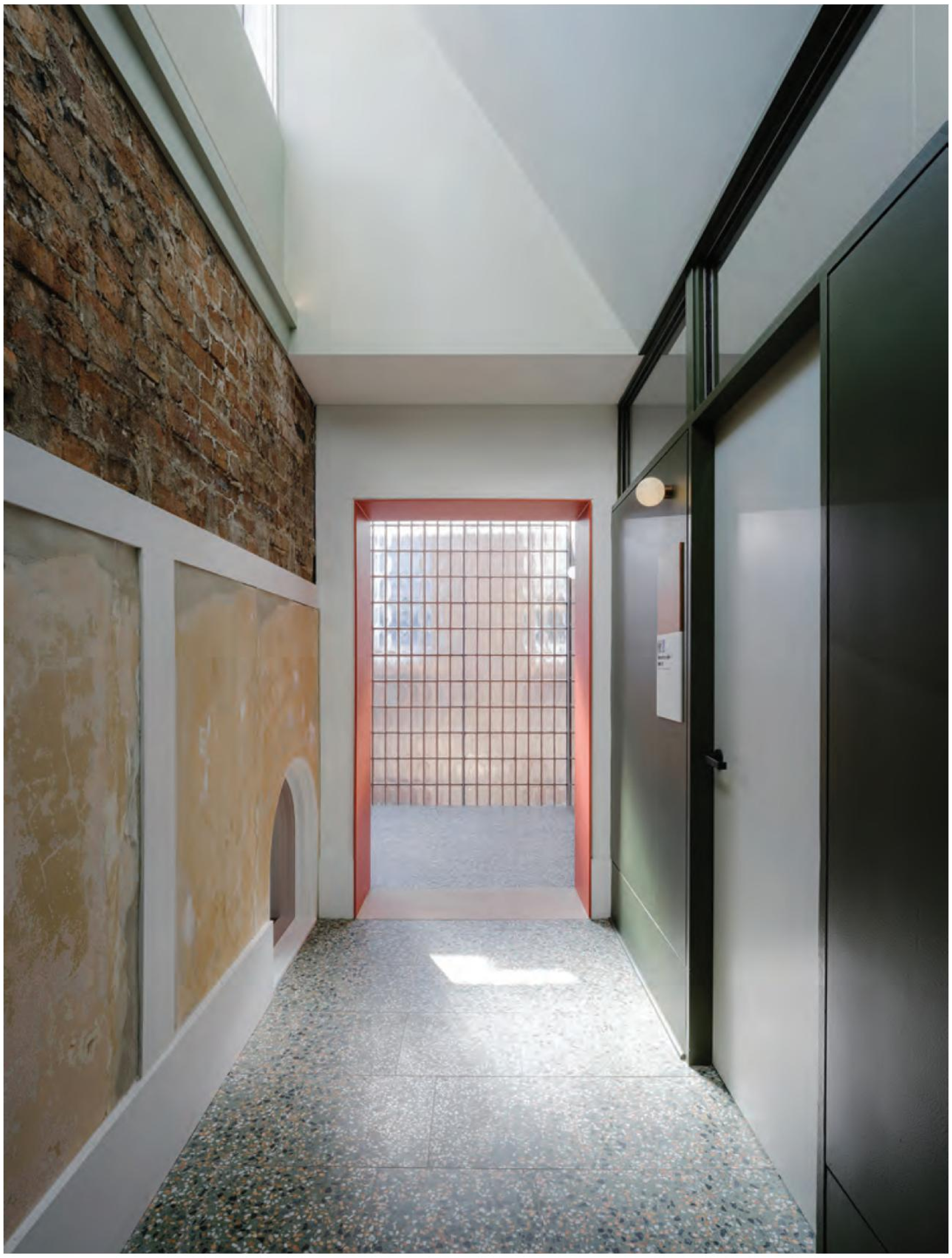
2024 SUSTAINABILITY AWARDS WINNER ADAPTIVE REUSE - ALTERATION/ADDITION

119 Redfern | Aileen Sage

WORDS AILEEN SAGE

119 Redfern, on Gadigal land is a collaboration between Aileen Sage, Djinjama, Jean Rice, Noni Boyd and the City of Sydney.


Exploded Axonometric
Aileen Sage Architects with Djinjama, Jean Rice, Dr Noni Boyd and the City of Sydney Council
119 Redfern Street



The accessibility upgrade of the heritage listed former Post Office building necessitated not only physical but psychological accessibility for a future use to be determined by the First Nations community.

Re-read through the lens of Country (with cultural design research undertaken by Djinjama), this place is celebrated and honoured. Once prevalent Turpentine-Ironbark Forest is remembered, and the powerful owl recognised as a symbol of resilience.

While the existing colonial building lends its prominence to its new use, most works are consolidated to the south-east portion of the building. A new strongly patterned masonry lift tower clearly demarcates the new entrance, a counterpoint to the original colonial clock tower. A regraded and patterned laneway provides dedicated entry space and level access to the building.

The entry opens onto the reception and extends through to the opposite porch. Lift lobby spaces internalise originally external walls and the existing mezzanine is raised to provide access to the upper floor.

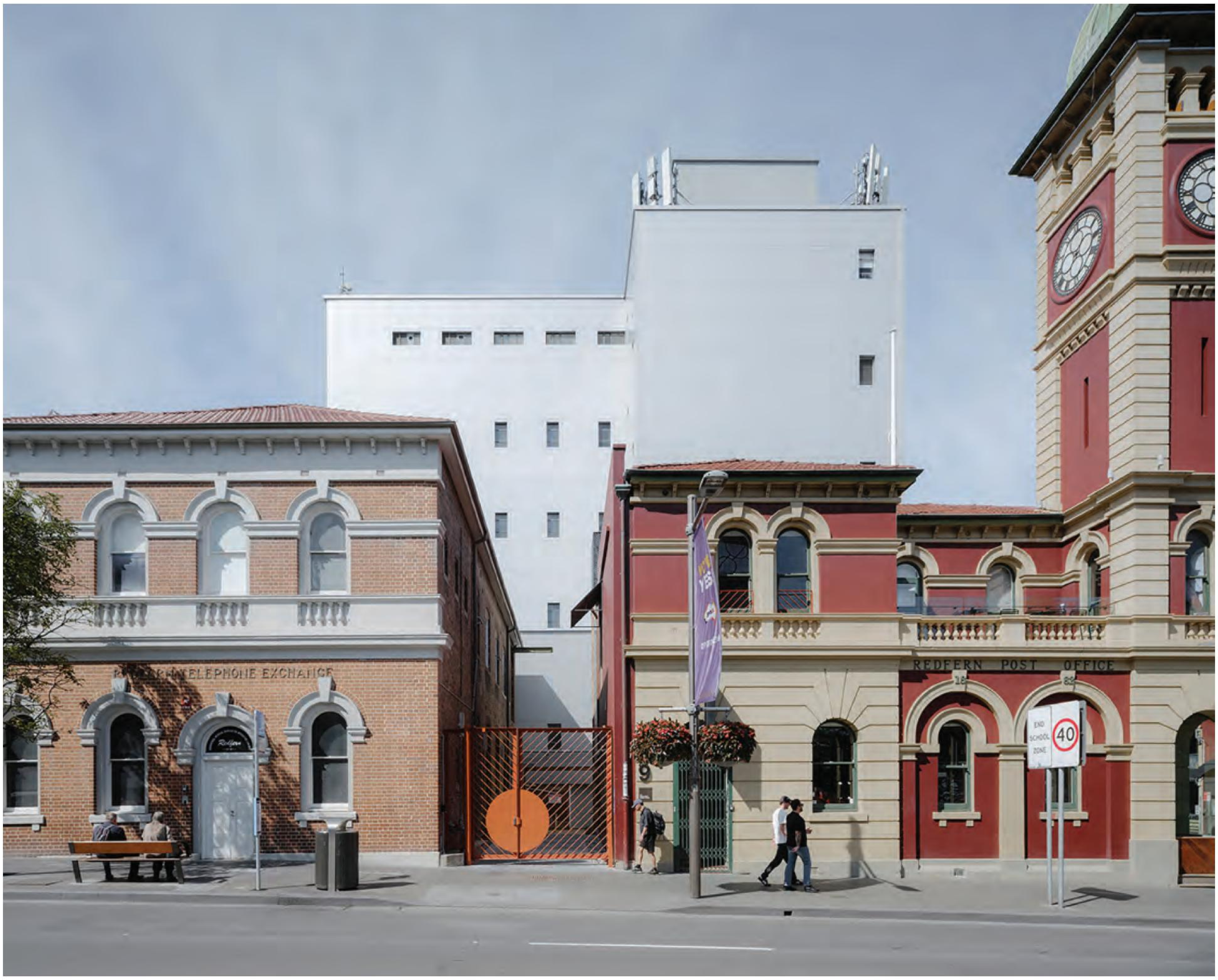
Sustainability is understood through Country. ‘Enoughness’ is a core value through which Djinjama operates, passed down through generations of Aboriginal Elders - everything shares an interconnected network equally. We seek to acknowledge what is ‘enough’, utilising existing resources and only taking more if necessary.

119 Redfern reveals, respects and reuses materials from this place while opening the building to protected yet public spaces and initiating connections to sky, earth, and water. Part of an ongoing collaborative conversation, a respectful, sensitive, and celebratory approach seeks to embed Aboriginal perspectives in both process and built outcome.

Within a Country centred worldview, 119 Redfern seeks to enable psychological accessibility while doing less. The key project interventions are small scale but highly specific and layered, focussed in areas of lowest heritage significance. The bulk of the existing heritage building is left intact. Larger spaces are left to be programmed by the building’s future users while small thermal and acoustic interventions improve their performance.

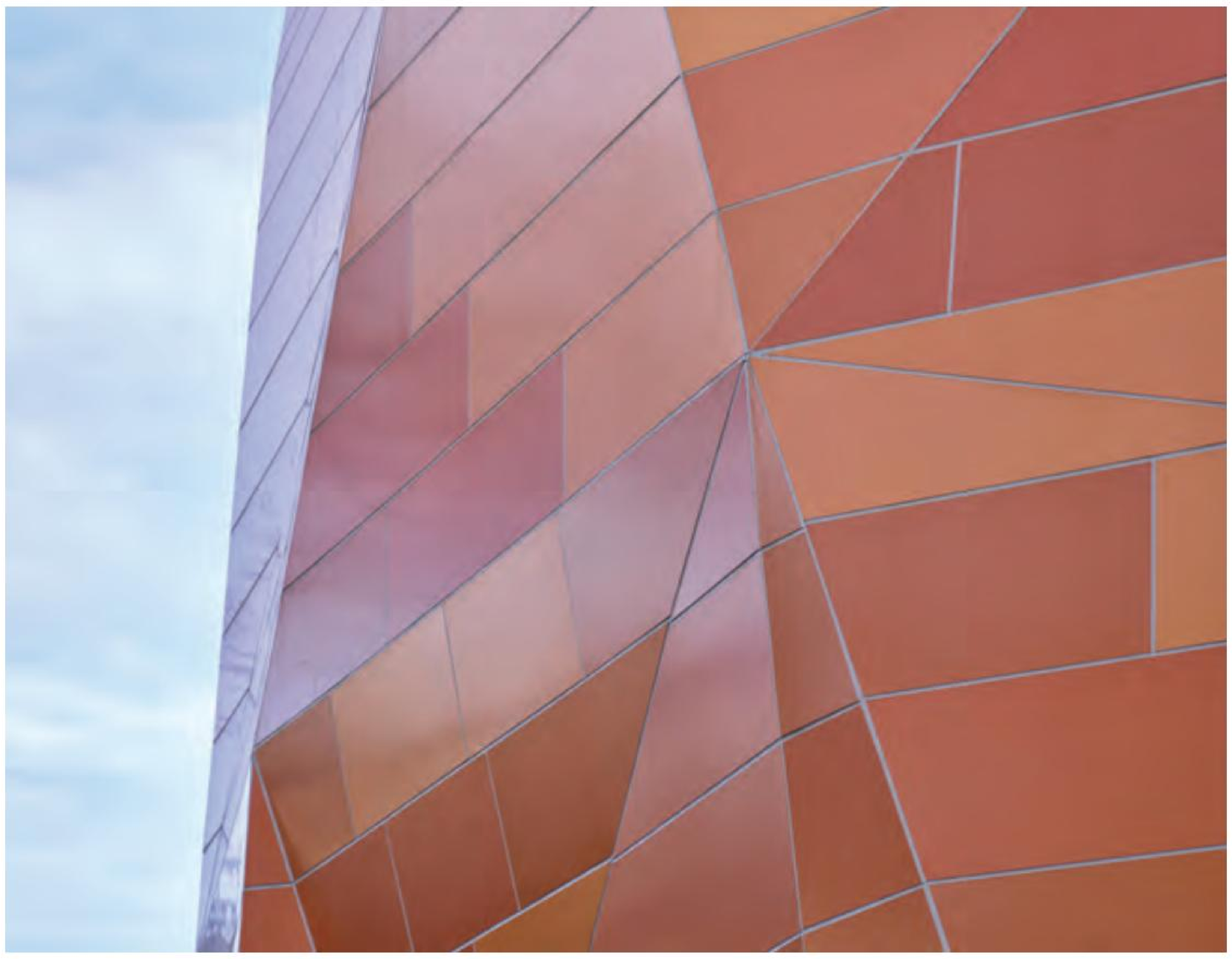
The passive thermal control systems of the existing building are retained and reinstated where they performed well. Thermal mass and solid to glazed ratios are largely retained and natural wall and underfloor ventilation typical of buildings of its era are reinstated, while small thermal and acoustic interventions (such as secondary windows) improve its performance.

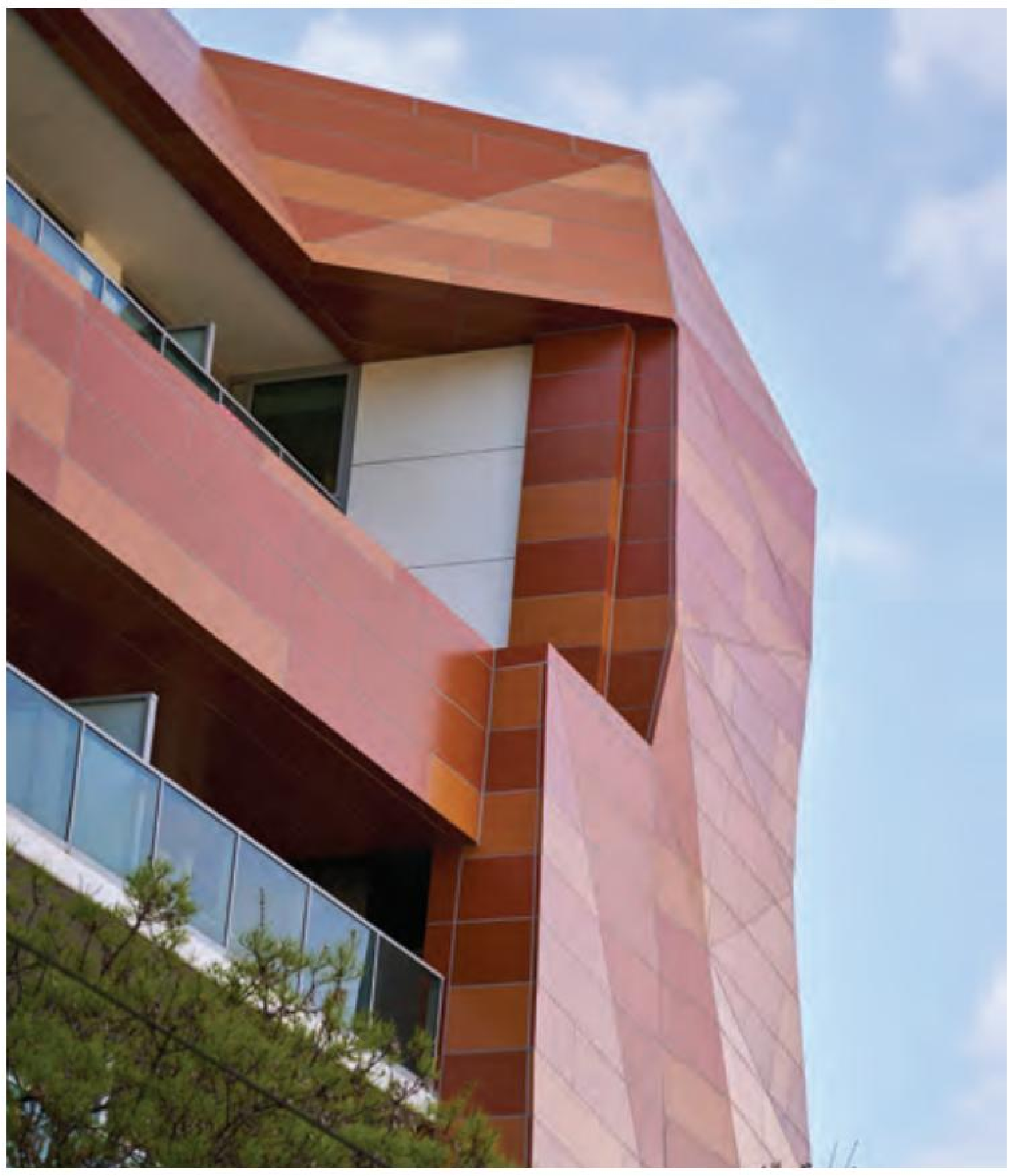
Reclaimed and reused materials and fixtures including existing bathroom fittings, light fittings, and mechanical ventilation, dark and light recycled local bricks, stone paving and recycled local timber make use of what has already been taken from Country and minimising material travel distances.



PROJECT CREDITS

Design/Architecture Firm: Aileen Sage with Djinjama, Jean Rice, Noni Boyd and the City of Sydney
Project Location: 119 Redfern St, Gadigal Land, Redfern NSW
Project Lead/Director: Isabelle Toland (Project Director) and Amelia Holliday (Support Director), Yvette Salmon (Project Lead)
Photography: Hamish McIntosh





A vibrant transformation: ALPOLIC™ NC/A1 brings safety and style to Trilogi Apartments

When its existing cladding was deemed combustible, the Trilogi Apartments faced a significant safety challenge. To align with Australian safety standards, the body corporate was obligated to select a replacement product that met NCC compliance requirements. Simultaneously, the team sought a solution that offered exceptional design versatility to ensure the recladding project enhanced this contemporary apartment block's safety and striking geometric aesthetic.

As the most tested aluminium composite cladding on the market, adhering to stringent safety regulations and ensuring phenomenal design flexibility, the ALPOLIC™ NC/A1 emerged as the perfect solution. Having successfully passed rigorous testing to meet DtS criteria under the National Construction Code, the ALPOLIC™ NC/A1 ensured compliance, while its superior flatness, durability, and extensive range of colours and finishes offered the design sophistication required to deliver the desired aesthetic. Specified in vibrant shades of Burnt Orange, Golden Orange and Tuscan Orange, the strategically arranged ALPOLIC™ NC/A1 panels created a mesmerising mosaic that enlivened the Prahran suburb while highlighting the building's unique aesthetic.

In contrast to solid aluminium sheets that were considered at the start of the project, ALPOLIC™ NC/A1 maintains its structural integrity and a sleek, uniform appearance. It ensures outstanding performance under extreme weather conditions such as hail and prevents warping, deformation, or discolouration. This exceptional performance is further enhanced by the Lumiflon FEVE coating technology, which offers remarkable resistance to UV radiation, and corrosion, preserving the building's visual integrity for years to come with minimal maintenance.

The panels' superb safety profile, enduring performance, and aesthetic potential were further enhanced by an industry-leading 20-year unconditional full replacement warranty backed by Mitsubishi Chemical Infratec Co., Ltd, and a product EPD, which instilled confidence in the project's long-term safety and environmental credentials.

In addition, Network Architectural, the supplier of ALPOLIC™ NC/A1 in Australia, provided comprehensive technical guidance throughout the project. "They visited the site regularly, ensuring that everything was progressing smoothly," said Dr Jonathan Barnett, Fire Safety Engineer and Chairman of the Owners Corporation. "Their expertise and support were invaluable, particularly in achieving the perfect colour match with the existing cladding."

The ALPOLIC™ NC/A1's performance also impressed ACA Cladding, who installed the cladding. "ALPOLIC™ NC/A1 is 4mm thick, making it more rigid and easier to handle compared to other materials," noted Samuel Harkness, Construction Manager ACA Cladding. "The colour consistency and finish were excellent, and the 20-year warranty provided an added layer of assurance."

The captivating mosaic of warm orange hues adorning the Trilogi Apartments' vibrant facade emerges as a testament to ALPOLIC™ NC/A1's remarkable fusion of safety, performance and aesthetics. This exceptional residential project adds a striking new landmark to Melbourne's energising cityscape and reinforces ALPOLIC™ NC/A1 as the premier choice for architects, builders, and specifiers seeking the pinnacle of building safety, enduring performance and visual excellence.

Network Architectural

FIND OUT MORE
bit.ly/Network-Architectural-CS-ADQ4-2024

Sustainability
Awards

2024 Sustainability Awards Winners

At the stunning 150-year-old Fullerton Hotel in Sydney, a crowd of more than 350 gathered to mark the 18th iteration of a unique celebration—a nod to the brilliance and resilience of minds dedicated to sustainable built design.

These awards, which highlight projects, people, and products, were not merely accolades but acknowledgments of the monumental work being done to steer us toward a future with less environmental impact.

In a time when the global urgency for change rings louder than ever, this gathering stood as a showcase for innovation—an exhibition of talent, technology, and vision poised to move Australia toward the elusive goal of net-zero emissions. And yet, the spirit of the event was as much about the past as it was about looking forward. After all, there's a comfort, even a kind of joy, in returning to the 'traditional' live format after years of digital detachment. The winners, too, felt it. The applause was both a salute to their achievements and an audible appreciation for the human touch.

The night bestowed its honours on 18 winners, with 10 others receiving honourable mentions—a small gesture for contributions that loom large in our shared narrative of sustainability. This year's significance, the 18th time such accolades have been conferred, was underscored by the United Nations Climate Change Conference or Conference of the Parties of the UNFCCC, more commonly known as COP29 that is going on as you read this. As the world wakes to the realisation that we have long lived unsustainably, those honoured at this event are at the forefront of mitigating our collective carbon footprint.

Behind the awards, of course, lies a story of immense teamwork. Dick Clarke, the prodigal Head Judge, led the 2024 Jury with a steady hand, ensuring that each winner stood not just for innovation but for integrity and ingenuity. Their guidance, combined with the meticulous efforts of Architecture & Design's sales, marketing, and production teams, made the night a glittering success.

A special shout-out goes to Architecture & Design's new Digital Editor Clémence Carayol who was instrumental in helping these awards to success.

Yet no event of this magnitude comes without its silent champions—the unsung heroes who work behind the scenes. The Events team must be lauded for crafting an unforgettable evening, a feat made possible by the dedicated commercial partners who lent their support. Their involvement, alongside the triumphant return of the Sustainability Summit, held both in-person and online, helped create a seamless transition from conversation to celebration.

And the winners? Well, they certainly deserved their moment in the spotlight.

BRANKO MILETIC, EDITOR

PHOTOGRAPHY Hamish McIntosh.

PROUDLY PARTNERED BY

BONDOR metecno

ADAPTIVE REUSE (ALTERATION/ADDITION)

Recognises the adaptive reuse of a building (heritage and/or new) that has minimal impact on the historical significance of the building and its setting, while also pursuing a design that is sympathetic to the building in order to give it a new purpose.

WINNER

119 REDFERN

REDFERN AILEEN SAGE WITH DJINJAMA, JEAN RICE, NONI BOYD + THE CITY OF SYDNEY

The initial brief for 119 Redfern St brief called for the accessibility upgrade of an 1880s Victorian-Italianate masonry building. Sited on a prominent ridgeline in Redfern, an historic and current epicentre of First Nations social resistance, the former post office building was chosen by local First Nations community representatives as the site for a new community facility.

Key to this project was the provision not only of physical but psychological accessibility. Expanding upon the functional brief, accessibility becomes celebratory, opening out onto new shared yet protected spaces. The interventions allow for respectful and deliberate transition into the building and provide space for community to pause, greet and take shelter.

HIGHLY COMMENDED

PARK STREET BY MILIEU

BREATHE + MILEU

PROUDLY PARTNERED BY

Network Architectural

COMMERCIAL ARCHITECTURE (LARGE)

A Class 5, 6, 7 or 8 building used for professional and / or commercial purposes of over 500sqm in floor size.

WINNER

T3 COLLINGWOOD
JACKSON CLEMENTS BURROWS ARCHITECTS

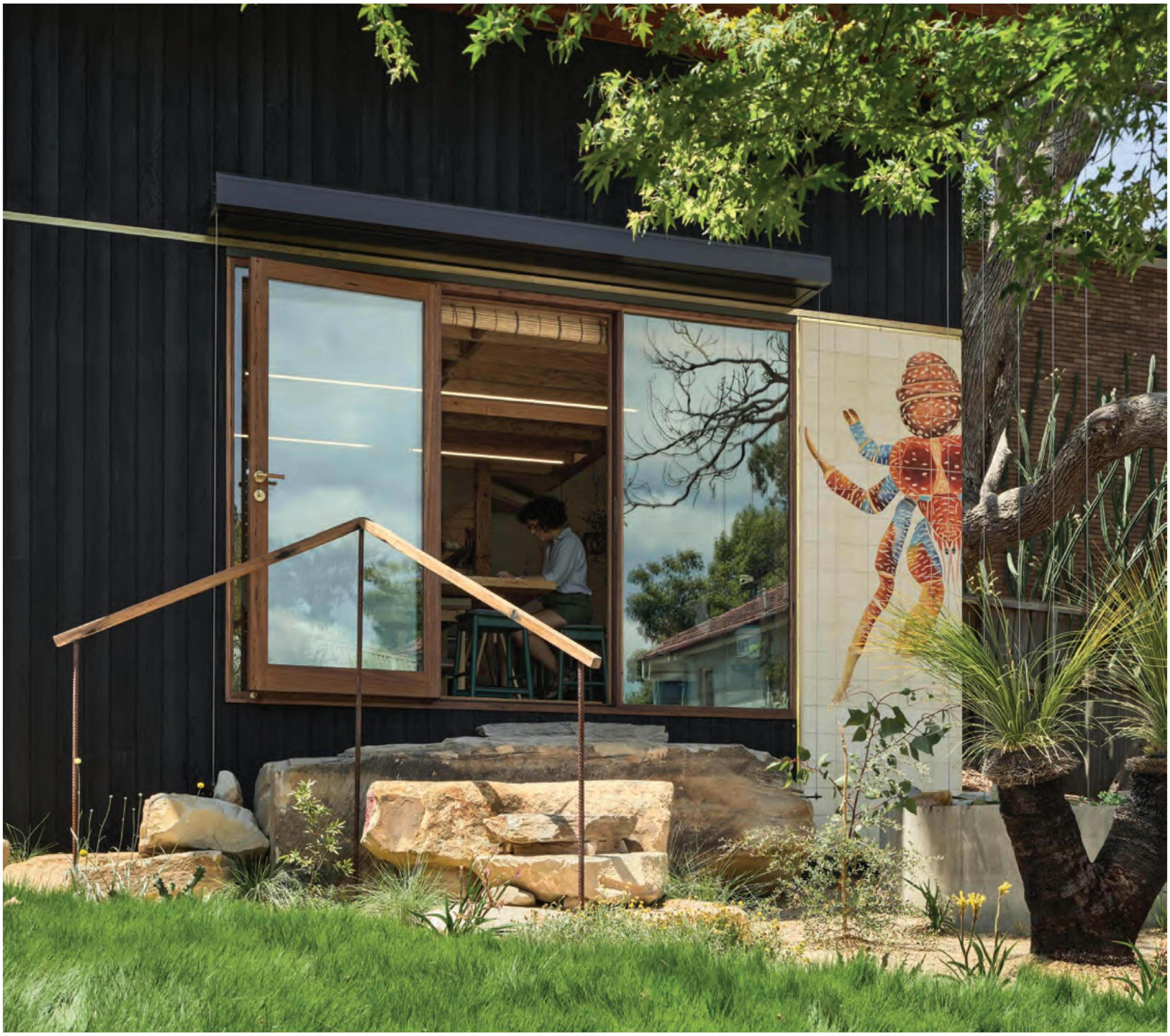
Responding sensitively to its rich industrial context, T3 Collingwood aims to positively contribute to Collingwood's urban streetscape and sense of community. The high quality 15-level commercial building provides an activated ground plane on Wellington St with cafes, restaurants, and other public amenities.

HIGHLY COMMENDED

SYDNEY SWANS HQ
POPULOUS

PHOTOGRAPHY John Gollings, Tom Blachford.

PHOTOGRAPHY Barton Taylor.



COMMERCIAL ARCHITECTURE (SMALL)

A Class 5, 6, 7 or 8 building used for professional and / or commercial purposes of under or equal to 500sqm in floor size.

PROUDLY PARTNERED BY

Verosol

WINNER

COCONUT CRAB

ALEXANDER SYMES ARCHITECT (ASA)

Coconut Crab is a regenerative ceramic studio designed in collaboration with the client, Casa Adams Fine Wares, and landscape architect Jason Monaghan in Inner West Sydney. Casa Adams' aim is to encourage preservation and spark curiosity of marine life through meticulously painted, hand-made porcelain plates, as well as running art and educational workshops in collaboration with marine biologists in the studio. The biggest example being the giant tiled Coconut Crab climbing the facade. Listed as vulnerable, the Indo-Pacific crab is threatened by over harvesting and climate change. Its presence on the facade facilitates conversations of preservation with visitors and the greater community.

HIGHLY COMMENDED

ZEN DEN LEGAL OFFICE

FRED ARCHITECTURE

PROUDLY PARTNERED BY
Electrolux Group

PHOTOGRAPHY Dion Robeson.

MULTI-RESIDENTIAL DWELLING

The design of a new townhouse, duplex or residential complex that contains multiple residential dwellings. Projects nominated under this category are classifiable as Class 2 or Class 3 buildings.

WINNER

HOPE ST HOUSING

MDC ARCHITECTS & OFFICER WOODS

This medium density housing project comprises 28 diverse terrace houses/walk-up apartments. It expands the typological range of White Gum Valley housing, allowing new residents in smaller households to share the established amenity of the suburb.

The design works hard on multiple levels to provide amenity for the residents and integrate comfortably in its surroundings. It responds to the local neighbourhood character, provides for optimised solar access in every dwelling, and prioritises deep soil planting and adjacent landscape.

Balancing diversity in the size and type of units with cohesion across the entire site, the project comprises two rows of well-lit, well-ventilated north-facing homes. It benefits from a "landscape first" approach where every dwelling has generous setbacks for deep soil gardens to accommodate large trees, and high permeability to enable rainwater retention within the site itself.

HIGHLY COMMENDED

NIGHTINGALE MARRICKVILLE

SJB

PROUDLY PARTNERED BY

Wood Solutions

PHOTOGRAPHY Zen Architects.

EDUCATION & RESEARCH

A childcare centre, preschool, primary, secondary or tertiary educational facility or a facility where an educational institution is a partner.

WINNER

FERN STREET CHILDREN'S CENTRE
ZEN ARCHITECTS

Nestled within the native botanical context of Tricks Reserve, Fern Street Children's Centre by Zen Architects mediates between civic and educational sentiments to emerge as a considered architectural response to the natural elements while seamlessly forging connections with the surrounding community. This approach changes the formality of the building and the way we traditionally think about kindergartens and community centres, breaking down inhibitions and acting as a precedent for our future civic projects within sensitive environments.

HIGHLY COMMENDED

BARKER COLLEGE MATHS AND STUDENT HUB
ARCHITECTUS

CLIFTON HILL PRIMARY SCHOOL
JACKSON CLEMENTS BURROWS ARCHITECTS

PUBLIC BUILDINGS

A building or facility or artwork which primarily services, or is used by the public except educational facilities.

PROUDLY PARTNERED BY

siniat

WINNER

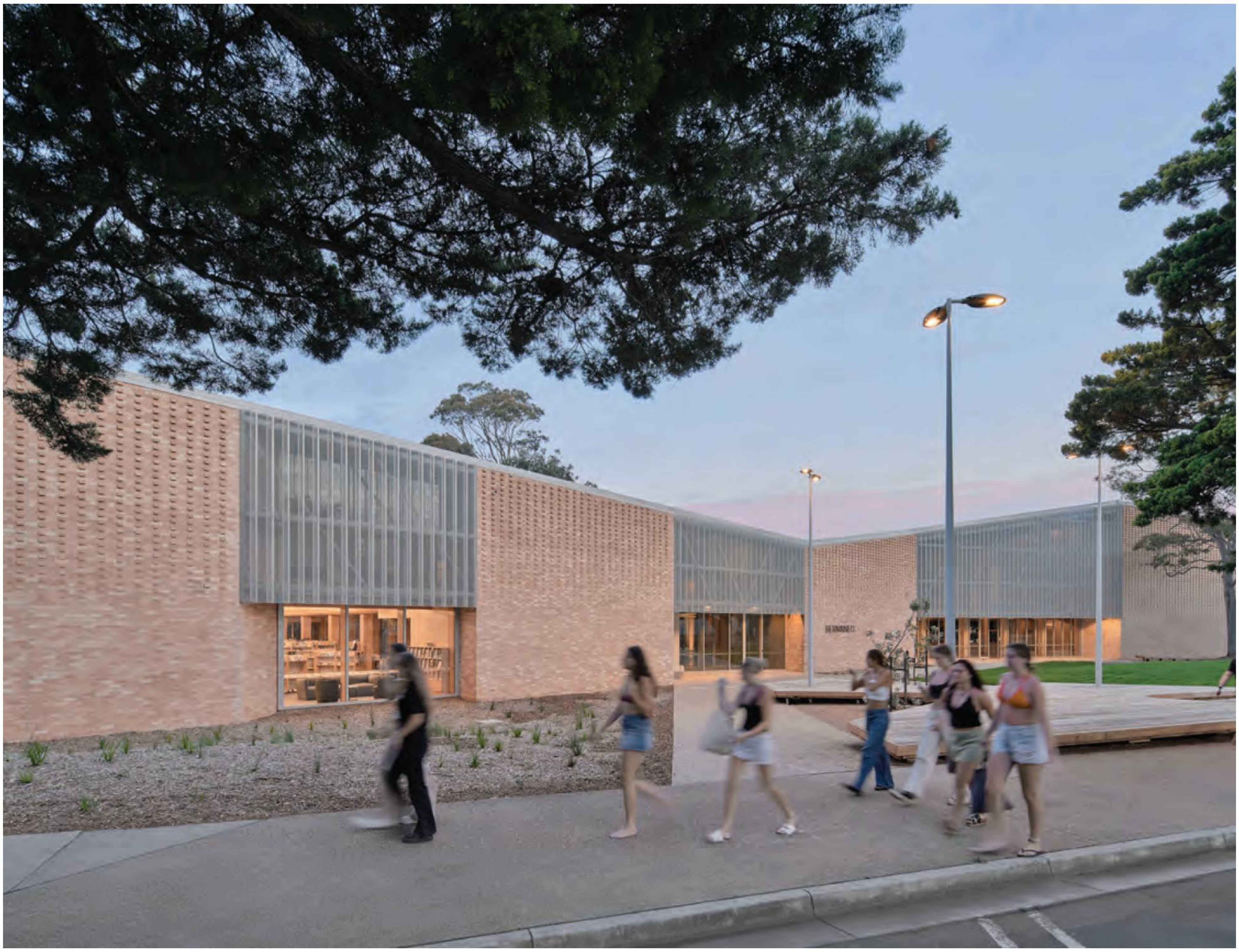
BERNINNEIT CULTURAL AND COMMUNITY CENTRE

JACKSON CLEMENTS BURROWS ARCHITECTS

Located on Phillip Island on Bunurong Country, Berninneit, (meaning to 'gather together') creates a new purpose-built public building to support a range of uses including a theatre, library, gallery, museum, community function rooms and offices.

Evoking the region's natural geology and topography, the design feels inherently connected to and of its place. Warm, pink-cream brick references nearby sand dunes and beaches, whilst internal timber columns speak to the island's jetties and pier structures.

The building creates a dynamic and interactive destination that is set to become a source of civic pride. Bringing together the cultural and social aspirations of the community, it draws visitors to showcase the region's rich history and culture



PHOTOGRAPHY Peter Clarke, Victor Vieaux.

HIGHLY COMMENDED

NORTHCOTE AQUATIC AND RECREATION CENTRE

WARREN AND MAHONEY

PHOTOGRAPHY Barton Taylor.

PROUDLY PARTNERED BY

DECO
EFFORTLESS, BEAUTIFUL LIVING

SINGLE DWELLING (ALTERATION)

Extensions and/or alterations to at least 50 percent of a Class 1a building.

WINNER

FUN HAUS
ALEXANDER SYMES ARCHITECT (ASA)

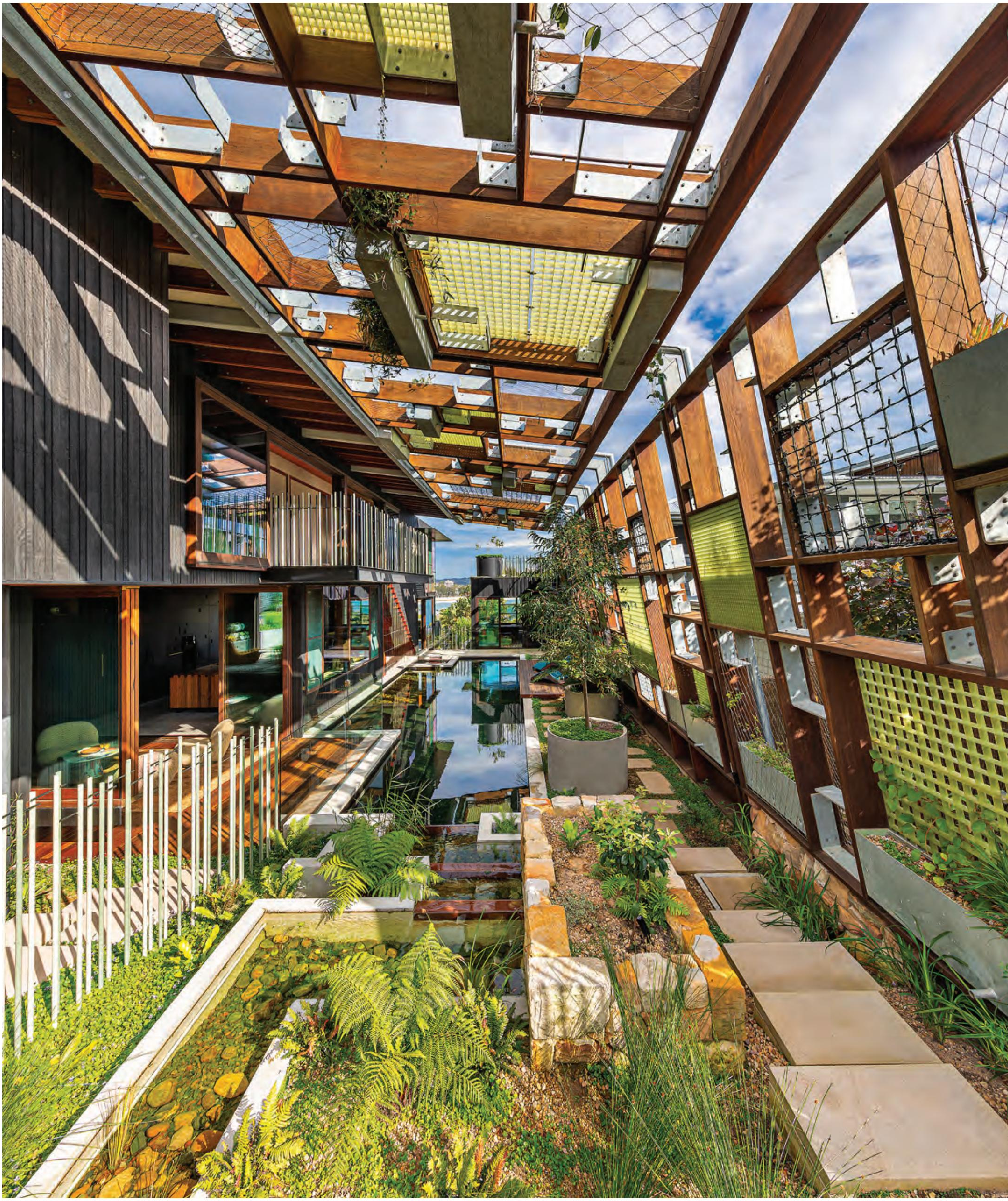
Fun Haus seeks to push preconceptions of space per person on a small 117m2 urban site, whilst still providing residents access to a generous private garden space. The 112m2 floor area can house 6 people - 4 people in the primary dwelling and 2 in the secondary dwelling, meaning 1 person / 19m2.

The decision to construct two dwellings rather than one larger one greatly increases the flexibility of the site. One larger family is able to function as one or the secondary dwelling can be rented out to family or others - the dual access to the site further enables this functionality. The maximised central courtyard was important to provide both dwellings with access to light, ventilation, and landscape outlooks.

HIGHLY COMMENDED

LIFE CYCLE
STEFFEN WELSCH ARCHITECTS

RE-FRAME HOUSE
STILL SPACE ARCHITECTURE



PHOTOGRAPHY Michael Lassman/Renata Dominik.

PROUDLY PARTNERED BY

Billi

SINGLE DWELLING (NEW)

The design and construction of a single-residential building which is also a Class 1a Building category.

WINNER

HOLOCENE HOUSE
CPLUSC ARCHITECTS + BUILDERS

In designing and building Holocene House, CplusC showcased what happens when we invest in sustaining life and leading change rather than building bigger and more. The home will soon generate more energy than was used to create and operate it. Regenerative thinking guided every aspect of design and construction, from the innovative use of low-embodied-energy spotted gum Shou Sugi Ban for exterior cladding to the natural swimming pool and extremely low-toxicity finishes throughout.

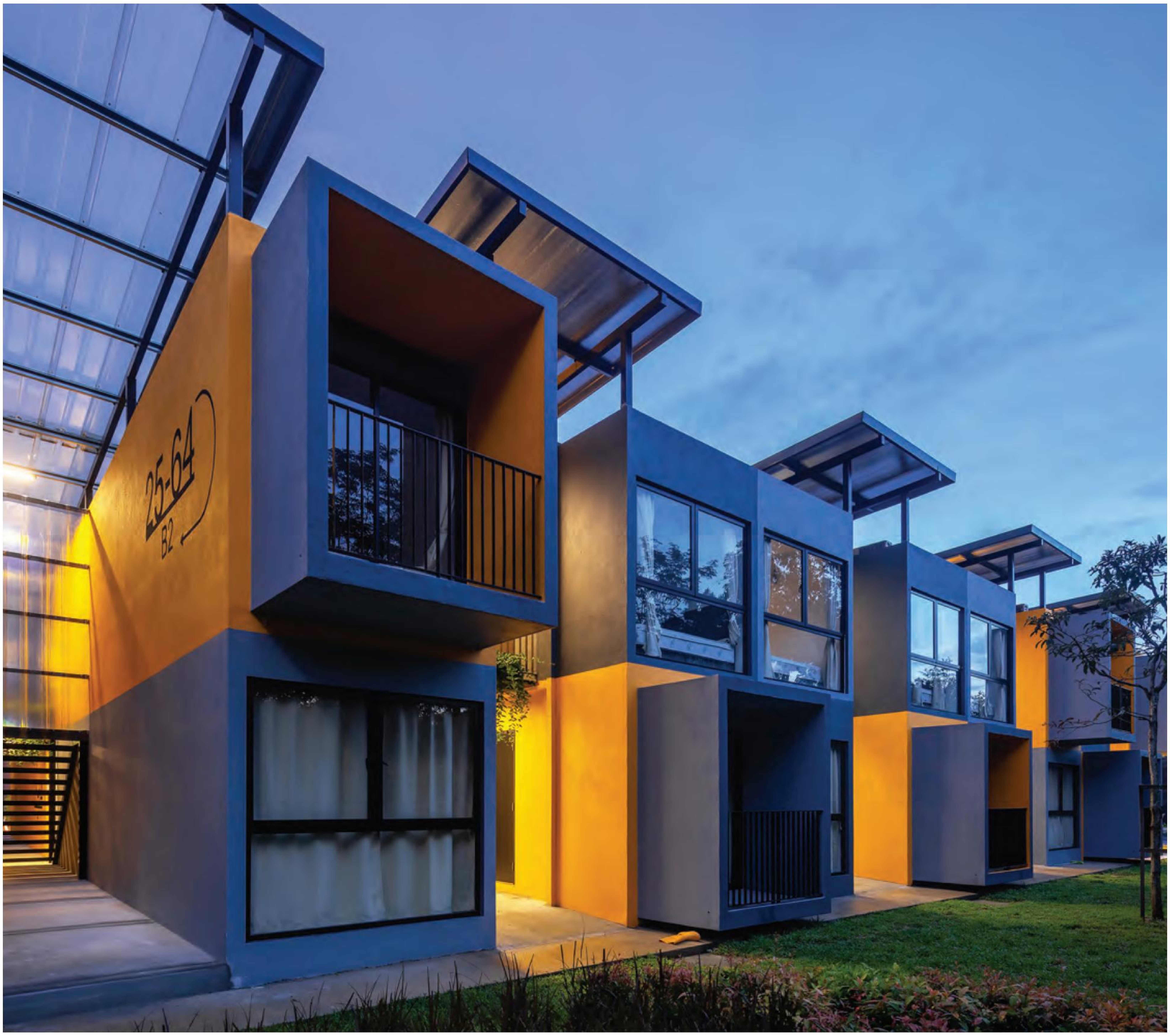
The home is BAL-29 rated and climate resilient with a photovoltaic system generating ten percent more energy than the family needs and an underground rainwater tank. The natural swimming pool is a reservoir, recycling and cleaning water to nurture coastal ecology – and our friends, the bandicoots.

HIGHLY COMMENDED

HINDERWELL ST HOUSE
MDC ARCHITECTS

SAPLING
ANDERSON ARCHITECTURE

PHOTOGRAPHY pixelaw photography.



INTERNATIONAL DESIGN

The best environmentally responsible designed project from around the world, recognises the design and environmental qualities of a building that is located outside of Australia, while also pursuing a design that is sympathetic to its local surrounding in order to give it a new purpose.

PROUDLY PARTNERED BY

SAS International

WINNER

SKYBLOX CO-LIVING HOUSING
TKCA ARCHITECT

The SkyBlox project incorporated various sustainable products to enhance the overall sustainability of the development. These products include:
Recycled Steel & Shipping container: Used for structural elements, reducing the demand for new steel, and lowering the carbon footprint of the construction.

.

HIGHLY COMMENDED

NOKHA VILLAGE COMMUNITY CENTRE
SANJAY PURI ARCHITECTS

LANDSCAPE & URBAN

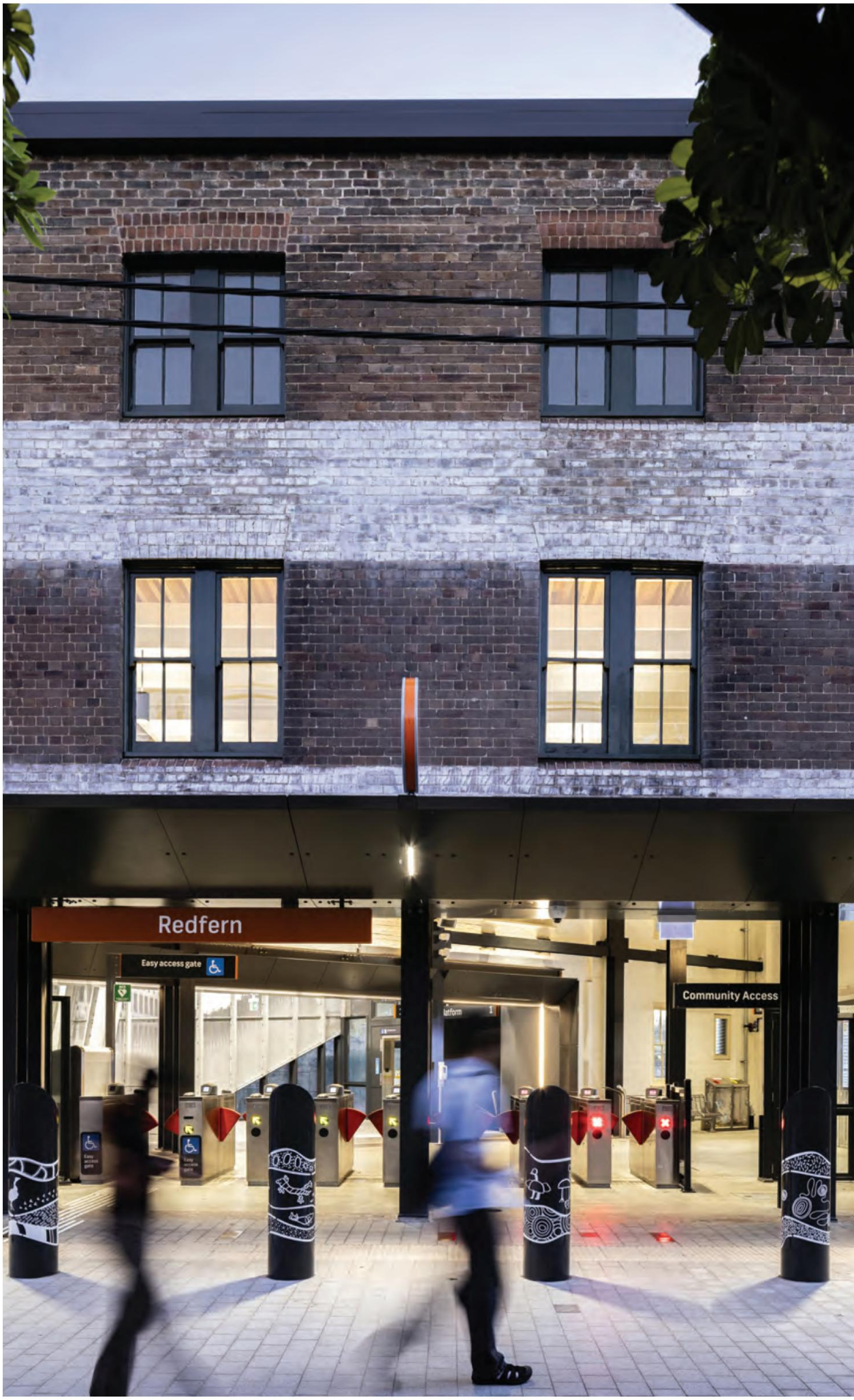
Buildings or non-building projects at the intersection of architecture, landscape design and urban planning. Examples include parks, pedestrian bridges and walkways, pools, shelters, picnic facilities, toilet blocks and playgrounds. Can also include green roofs, green walls and other urban garden and similar installations.

WINNER

REDFERN STATION UPGRADE
DESIGNINC SYDNEY

Redfern Station, a major Sydney transport hub, has been upgraded as part of the NSW Government's Transport Access Program, emphasising inclusivity, connectivity, and sustainability. The station now features a new southern concourse and entrances at Little Eveleigh and Marian Streets, integrating high-quality amenities while respecting the natural, cultural, and built heritage.

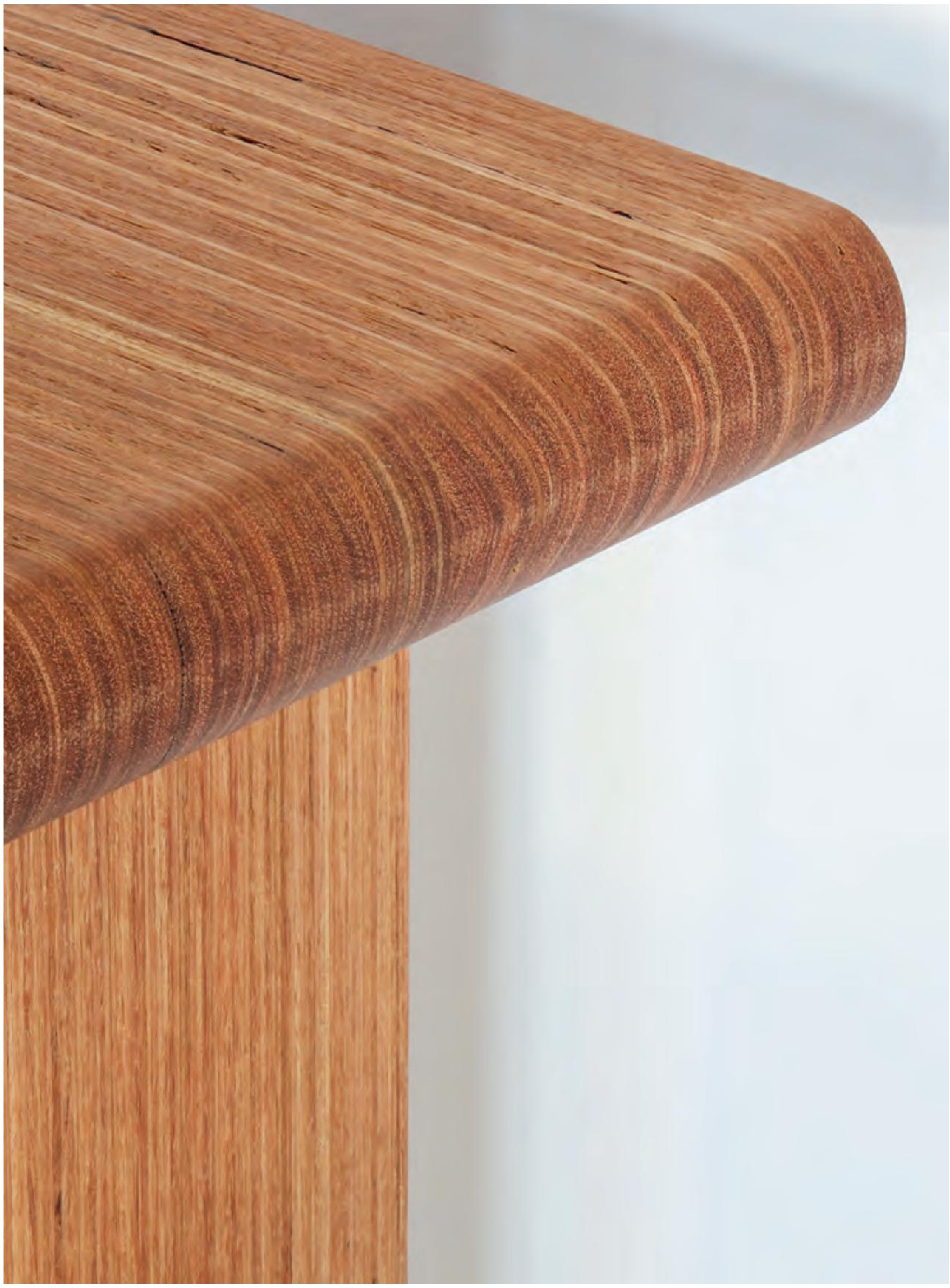
The project, which achieved an Excellent Design IS Rating by the Infrastructure Sustainability Council, aligns with NSW low-carbon future goals and delivers environmental, economic, and social sustainability. Design elements draw from Eveleigh's historical wetland and industrial past, with the adaptive reuse of an old warehouse at 125-127 Little Eveleigh for new station facilities. Improved pedestrian and bicycle zones enhance local access, blending Indigenous, natural, industrial, and contemporary heritage to foster community vibrancy.



PHOTOGRAPHY Brett Boardman.

PROUDLY PARTNERED BY

COSENTINO



PHOTOGRAPHY So Watt, Adam Mcgrath.

GREEN BUILDING MATERIAL

A building product that is renewable, environmentally responsible and where the impact is considered over the entire lifetime of the product.

WINNER

CRAFTED HARDWOOD TIMBER

CRAFTED HARDWOODS

At the heart of this technology is a patented process using a water-based "nano glue" that biomimics the properties of wood's natural lignin, a complex organic compound produced by trees. This gives our timber the same structure and remarkable properties as mature trees. To achieve nature's precision, this process is managed by robots and the power of artificial intelligence. The product is healthy, sustainable, natural, recyclable and free of harmful chemicals and toxins.

The process was also designed to increase yield and minimise waste; the wood fibres are obtained by rotary pealing each log, using as much of the tree as possible. The result is a 75% yield from a log compared to an average of only 33% using traditional methods.

HIGHLY COMMENDED

BOTANICRETE - PLANT-BASED WALL FINISH

MINERAL FOX

CIRCULAR SEA COLLECTION - RECYCLED OYSTER SHELL PLASTER

MINERAL FOX

PROUDLY PARTNERED BY

COMMERCIAL

INTERIOR DESIGN

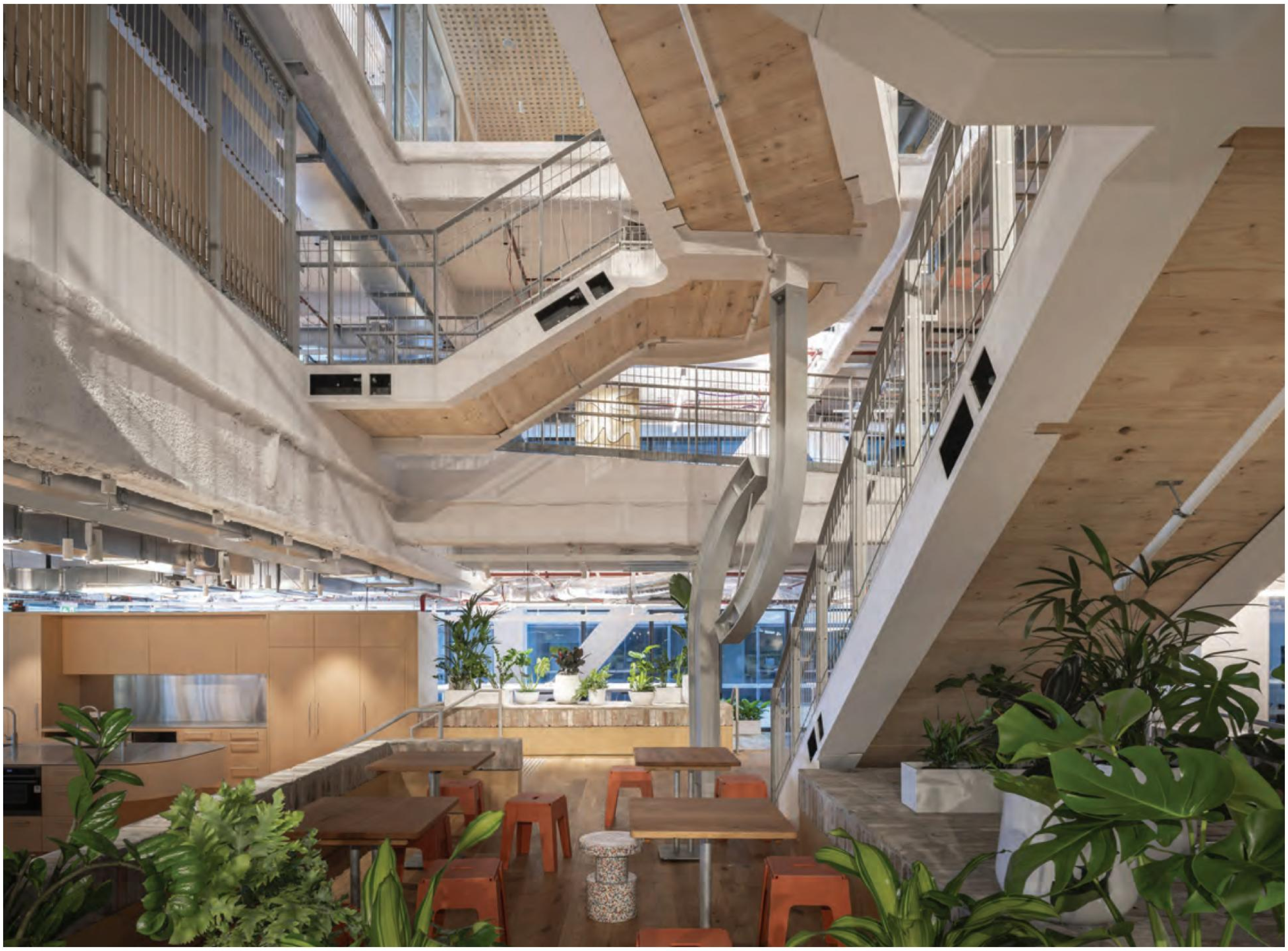
A renovation or fit-out of the interior of an existing building where the sustainable design is involved with such factors as determining the efficient Design firm and effective use of space, selecting construction materials that offer low environmental impact and lowering pollution, waste, and the lowering of the overall energy consumption.

WINNER

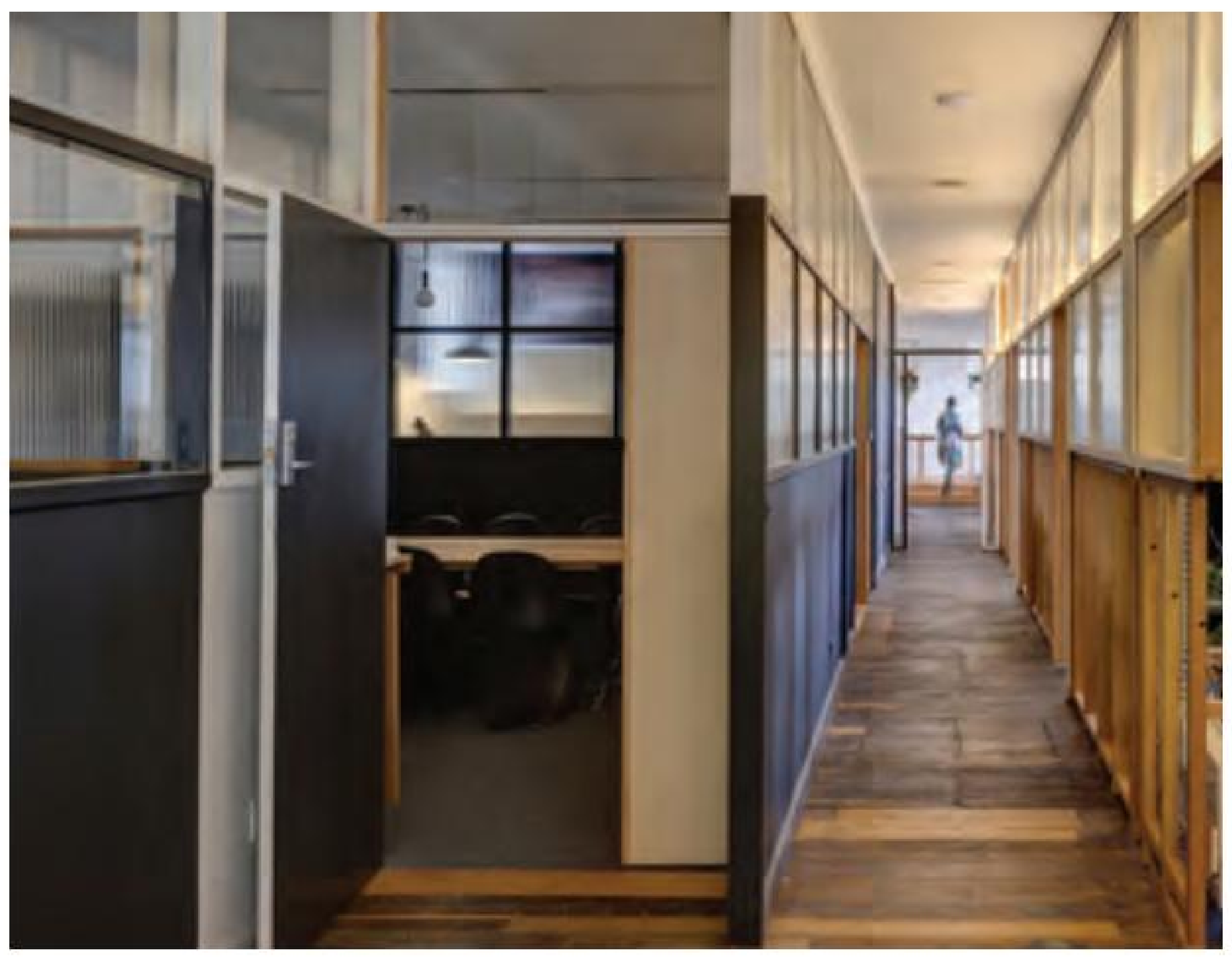
PERTH ARUP WORKPLACE

ARUP

The workplace is spread across three levels within the new Westralia Square 2 development in Perth. Arup engineers supported the base building design of the new building which has been built out of mass timber on top of an existing podium, leveraging the lightweight timber structure to maximise the potential yield from the established capacity of the structure. Further, there is no thermal plant in this new building, with existing excess capacity being utilised and connected to.



PHOTOGRAPHY Richard Stokes.



HIGHLY COMMENDED

LENDLEASE BRISBANE

BATES SMART

TERROIR HOBART OFFICE

TERROIR PTY LTD

PROUDLY PARTNERED BY

KNAUF

SMALL SUSTAINABLE PRACTICE

This award us open to all architecture and design firms with 10 or less staff and recognises their achievements including alignment with the UN 17 SDGs.

WINNER

STEFFEN WELSCH ARCHITECTS

STEFFEN WELSCH ARCHITECTS

Steffen Welsch Architects, founded in 2001, is renowned in Australia for its commitment to sustainable design in residential, educational, and aged care facilities. Steffen Welsch, a Bauhaus University graduate who arrived in Australia in 1993, infuses his central European roots into his work, promoting community and environmental harmony. Influenced by Austrian architect Hermann Czech, Welsch embraces the “Architecture as Background” philosophy, ensuring buildings enhance their surroundings through careful integration and material selection.

The firm’s approach prioritises enhancing environmental and social contexts, fostering human interaction and ecological well-being without dominating the landscape. Sustainability is seen as an ongoing process requiring innovation, adaptation, and a lifecycle perspective—from material sourcing to recycling.

PHOTOGRAPHY Steffen Welsch Architects.

PHOTOGRAPHY Five Mile Radius and Knight Wilson Architects.

HOSPITALITY & TOURISM

Examples of Hospitality & Tourism Design include projects that help create locally owned business and employment opportunities, environmentally friendly operations, education and awareness programs, energy and resource conservation, and waste & carbon dioxide reduction.

PROUDLY PARTNERED BY

Nero

WINNER

MATSO'S SUNSHINE COAST BREWERY

FIVE MILE RADIUS & KNIGHT WILSON

By peeling back the layers to restore the original pub, removing water-damaged material, and using landscaping to slow overland flow, the project significantly improves the overall health of the site and garden.

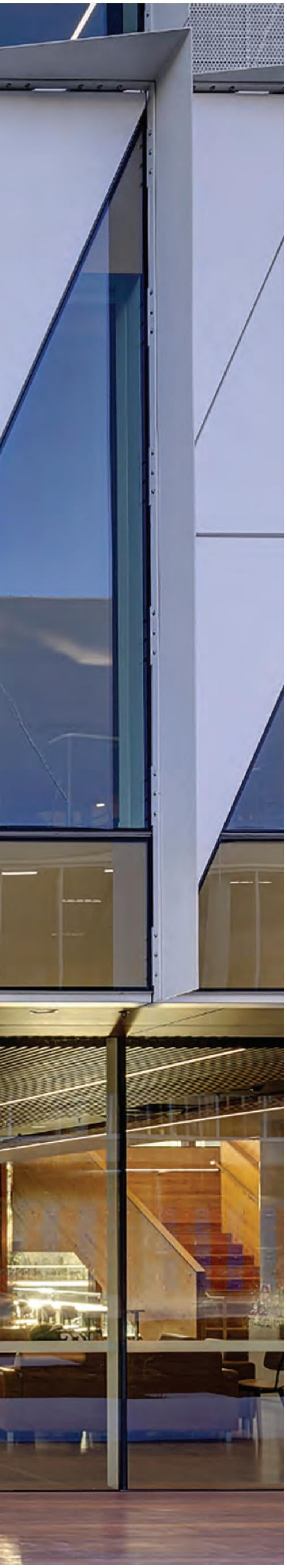
In addition, new works are naturally ventilated, daylit, connected to gardens, and built from natural and raw materials. The new works are designed to be wheelchair accessible, family-friendly, adaptable, and open to the local community for events.

HIGHLY COMMENDED

HV.HOTEL

HIP V. HYPE

PHOTOGRAPHY Architectus.



PROUDLY PARTNERED BY

Sika BUILDING TRUST

EDITOR'S CHOICE (SOCIAL & COMMUNITY OUTCOMES)

Editor's Choice is an award given by the Architecture & Design editorial team. All shortlisted projects are assessed for their suitability for this award on the basis of their contribution to and consultation with their local community.

WINNER

BARKER COLLEGE MATHS AND STUDENT HUB

ARCHITECTUS

Designed with a holistic approach to sustainability, the Barker College Maths Hub combines biophilic design principles, passive environmental strategies, on-site energy generation, and responsible material selection to create a learning environment that is in harmony with nature.

This future-focused learning environment prioritises a time-honoured sustainable design philosophy, working with the natural world to reduce environmental impact rather than relying on expensive solutions for meeting high operational demand.

PROUDLY PARTNERED BY

BlueScope

NUS
National University of Singapore

PHOTOGRAPHY Mediahub.

LIFETIME ACHIEVEMENT

A person who has over their career, shown exemplary efforts in advancing the progression of the sustainable built environment in Australia.

WINNER

PROF MATTHAIOS SANTAMOURIS

UNSW

Matthaios Santamouris is a Scientia Distinguished Professor of High-Performance Architecture at UNSW Sydney, and past professor at the University of Athens, Greece. His research focuses on energy conservation in high-performance architecture, notably heat-mitigation strategies to curb urban overheating.

Santamouris has acted as scientific coordinator for numerous international research programs, including Zero Plus: European Horizon Research Project on Zero Emission Settlements, and has reviewed research projects in 15 countries including the US, UK, France, Germany, Canada, and Sweden.

He is currently the editor in chief of Energy and Buildings, and associate editor of Solar Energy Journal. He has edited and authored 15 books on topics related to heat island, solar energy, and energy conservation in buildings.

EMERGING SUSTAINABLE ARCHITECT / DESIGNER

Open to architects / designers in their first five years of their career and recognises an outstanding achievement or development in the field of sustainable and / or environmental architecture planning or design across any of the building categories.

WINNER

SOPHIE CANARIS
DUNNHILLAM ARCHITECTS

Sophie Canaris is an architect and project manager, specialising in heritage, arts and community projects across Sydney, regional New South Wales, and London. Currently working at the Powerhouse Museum, Sophie is helping to deliver the ambitious exhibition program at their new museum in Parramatta. Her work is deeply rooted in sustainability and adaptive reuse, reflecting a commitment to environmentally responsible design.

Beyond her project work, Sophie is actively involved in the architectural community through her roles on the Emerging Architects and Graduates Committee for the NSW chapter of the Australian Institute of Architects, through teaching, and mentoring. These positions allow her to contribute to the profession's development, particularly in fostering new talent and promoting sustainable practices in architecture.

PHOTOGRAPHY Sophie Canaris.

2024 Best of the Best Winner

BEST OF THE BEST

Selected from among all the category winners on the basis of both sustainable outcomes and aesthetics and/or innovative design principles.

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Autex Acoustics

WINNER

T3 COLLINGWOOD
JACKSON CLEMENTS BURROWS ARCHITECTS

Responding sensitively to its rich industrial context, T3 Collingwood aims to positively contribute to Collingwood's urban streetscape and sense of community. The high quality 15-level commercial building provides an activated ground plane on Wellington St with cafes, restaurants, and other public amenities.

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Sustainability Summit

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Single Dwelling - Alteration/Addition

DECO EFFORTLESS, BEAUTIFUL LIVING

Multiple Residential Dwelling

Electrolux Group

Small Sustainable Practise

KNAUF

Hospitality & Tourism

Nero

Commercial Architecture – Large

Network Architectural

International Design

SAS International

Editor's Choice (Social & Community Outcomes)

Sika BUILDING TRUST

Public Building

siniat

Landscape & Urban

SUPAWOOD ARCHITECTURAL LINING SYSTEMS

Commercial Architecture – Small

Verosol

Education & Research

Wood Solutions

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ARCHITECTURE & DESIGN

Leading the way in sustainable mineral surfaces: Pioneering the Crystalline Silica-Free revolution

The end of an era in engineered stone brings with it the exciting prospect of brand-new surfaces for the home, ones that are sustainable and free of crystalline silica.

Leading the way in sustainable mineral surfaces, Caesarstone has launched a revolutionary new surface – Caesarstone Mineral™ Crystalline Silica-Free - a collection of 33 mineral surfaces created from a unique mix of minerals and containing a minimum of 80% recycled materials (such as glass). These surfaces contain no crystalline silica. The game-changer is the fact that this Mineral range looks and performs exactly like the surfaces it is replacing - offering exceptional resistance to heat, stains and scratches - and is the only surface of its kind to carry a lifetime warranty.

As a pioneer and leader of the global benchtop industry for more than 35 years, Caesarstone is once again at the forefront of technological innovation with its release of their new Mineral Crystalline Silica-Free surfaces.

With Caesarstone Mineral™ Crystalline Silica-Free, the brand has retained all the most popular colours and designs of its original engineered stone collection, such as the marble-inspired Calacatta Nuvo™, Empira White™ and Statuario Maximus™ and concrete designs such as Fresh Concrete™ and Raw Concrete™.

The new Mineral Crystalline Silica-Free collection will be produced in Grande size slabs – 3240 x 1640 x 20mm – to maximise the expanse of joint-free surface achievable.

Each Mineral Crystalline Silica-Free surface is produced with the utmost attention to sustainable practices. The surfaces, which will never require sealing, are both non-porous and non-toxic, with extensive independent testing certifying the absence of crystalline silica and VOCs (Volatile Organic Compounds). Caesarstone benchtops are guaranteed to be safe to use in the home, including when the product is being installed. These benchtops also pose no risk during the fabrication process, provided the necessary safety measures are adhered to.

caesarstone

FIND OUT MORE
bit.ly/Caesarstone-ADQ4-2024

Sorting green facts from fiction

WORDS MATTHEW MCDONALD

The surest way for specifiers to look past greenwashing and find genuinely sustainable products is via life cycle assessment.

The move towards environmental sustainability has had at least one unintended consequence.

It has ushered in an era of greenwashing. It seems that wherever you happen look, both within the construction sector and elsewhere, you will find somebody making unsubstantiated and/or inaccurate claims about green credentials.

So, what exactly are 'sustainable' products and how can they be accurately identified as such?

LIFE CYCLE ASSESSMENT

"To evaluate a product's sustainable properties, consider its entire lifecycle. Begin by understanding where materials are sourced and how they are processed and manufactured, ensuring they come with transparent documentation and certification," says Simon Pearson, Architectural Business Manager at Deco Australia.

This involves consideration of the product's entire life cycle, from production to disposal. And it also involves determining whether the product enhances energy efficiency and therefore reduces the operational carbon footprint of the building in question.

"Opt for products designed for recycling or reuse to support a circular economy. Additionally, investigate the manufacturer's sustainability practices, including their waste management and carbon reduction strategies, to confirm their commitment to environmental stewardship," adds Pearson.

Pointing to his own company's products to make his point, Pearson says that Deco Australia is able reduce its our carbon footprint by focussing on the sustainable practices of not just its own operations but also across its supply chain.

"Our aluminium products, from cladding to screening systems, leverage aluminium's high recyclability, with 75% of all aluminium ever produced still in use today, highlighting its role in a circular economy," he says.

"By partnering with Capral Aluminium and using their LocAl Green lower carbon aluminium, we cut waste and conserve resources, saving up to 4,400 tonnes of carbon annually."

ENVIRONMENTAL PRODUCT DECLARATIONS

For the average architect, focussed on day-to-day concerns, meeting deadlines, and so on, the task of conducting a life cycle assessment (LCA) may be a step to far.

The answer to this conundrum is easy – seek products that have already undertaken independent LCA and have the documentation to prove it.

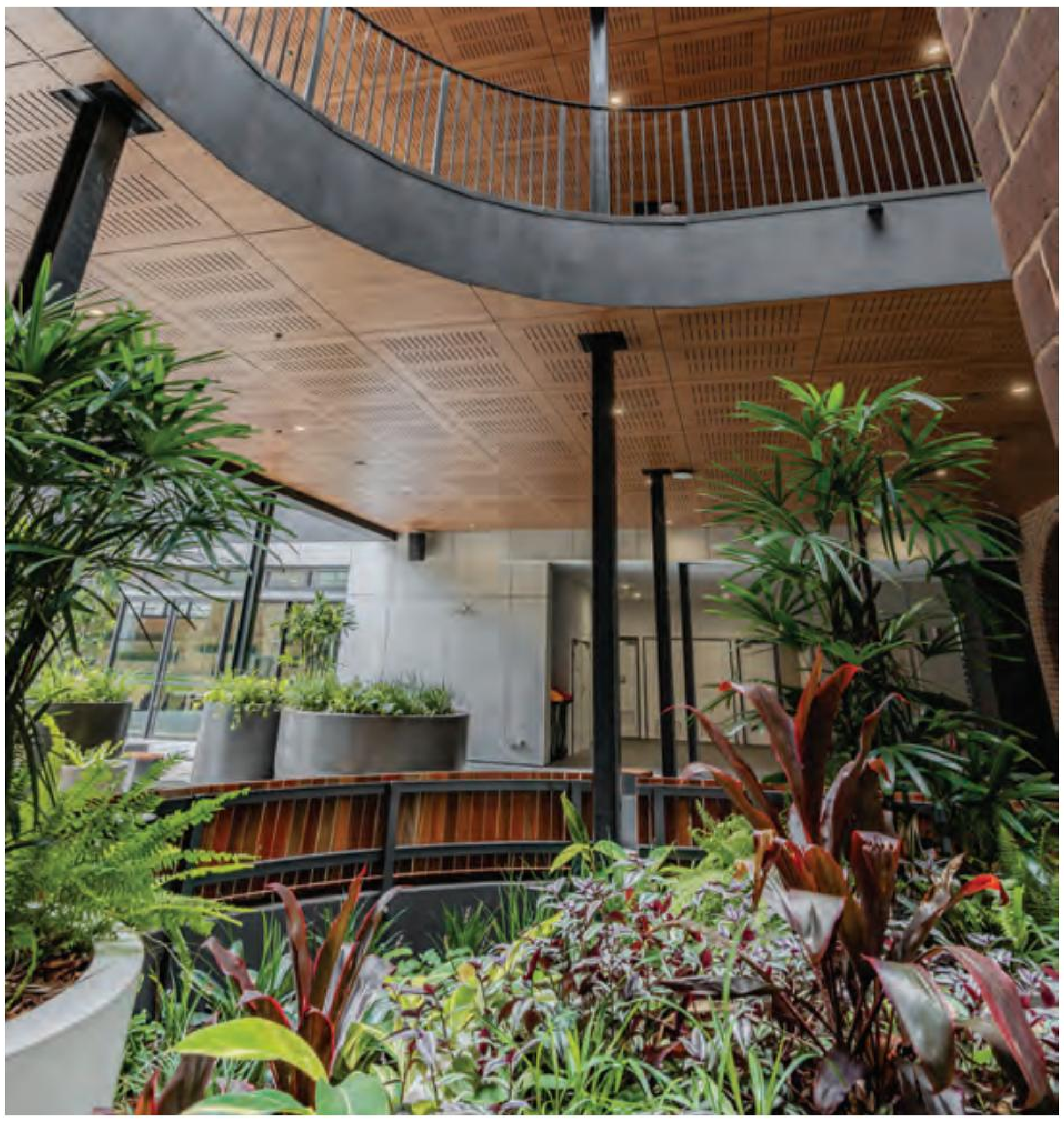
This documentation can take one of two forms, and Environmental Product Declaration (EPD) or a third-party Environmental Certification.

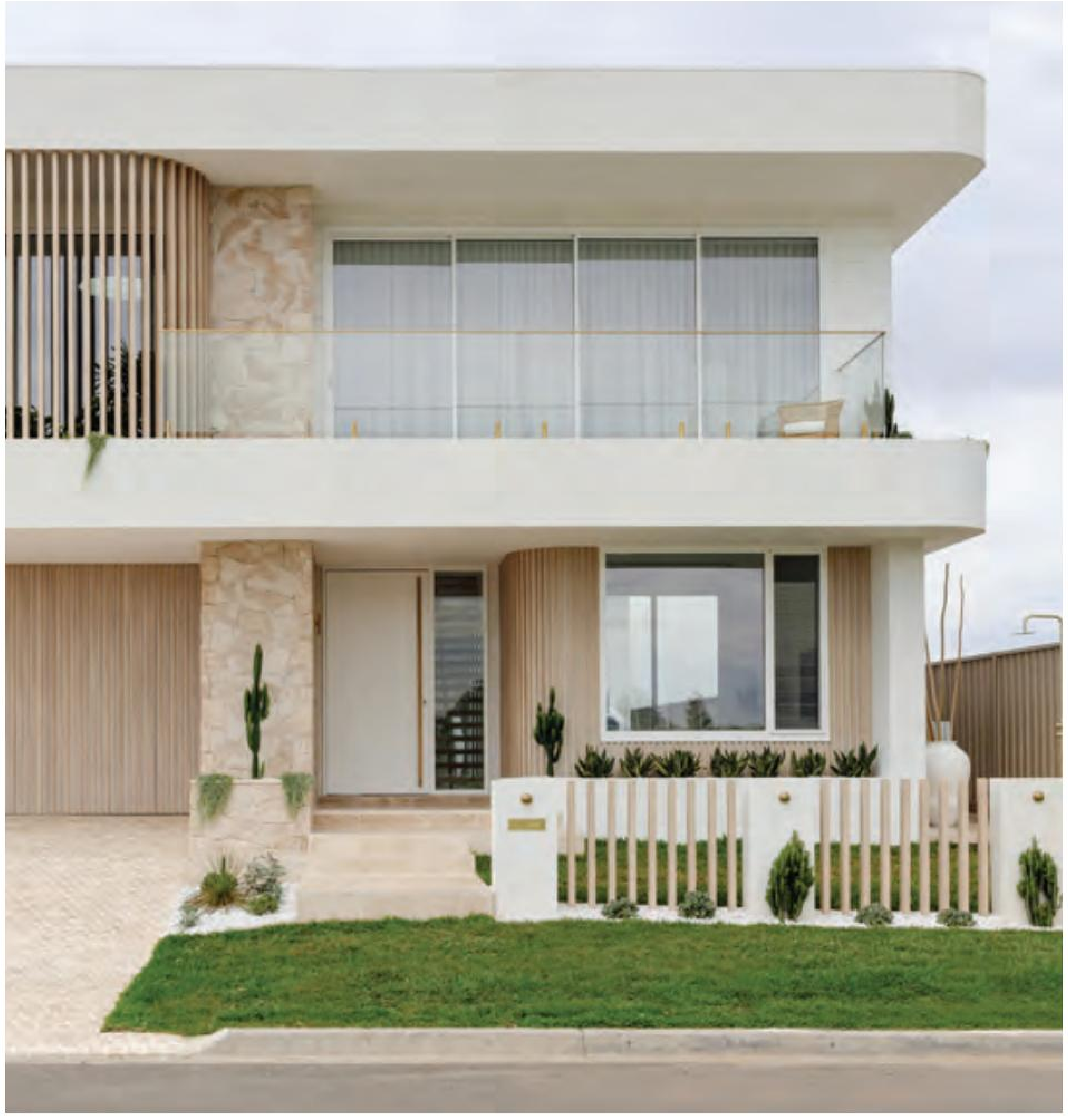
"An Environmental Product Declaration is a standardised document that provides detailed, quantified environmental data of a product, based on an LCA," says Kelly Watson, National Architectural and Specifications Manager at Knauf Australia.

In Australia, EPD certification can be provided by one of two organisations, namely Global Greentag and Australasia EPD.

Some building products, like insulation, window treatments, and glazing systems have the capacity to improve the thermal efficiency on the buildings in which they are installed, and therefore reduce operational carbon.

PREVIOUS & ABOVE Raw inkk.





ABOVE Deco.

"Knauf has recently obtained EPDs for our Australian made plasterboard products," says Watson, adding that products in the range include Sheetrock One, Sheetrock HD, Soundstop, Wetstop, Firestop, Fire Wetstop, Multistop, Multistop HI, and Shaftliner.

Continuing the theme, Watson says that Knauf aims to be an industry leader in sustainable construction.

"We plan to invest heavily to cost-efficiently decarbonise operations, to build a business that is both sustainable and profitable in the long term. Globally, we have set the ambitious goal of reaching net-zero carbon five years ahead of the Paris agreement, by 2045," she says.

"Further, we aim to cut controlled CO2 emissions in half by 2032, while also reducing water withdrawals by a fifth and ceasing to send any waste to landfill from plants."

ENVIRONMENTAL CERTIFICATION

There are a range of certifications that can help find products worth considering. Some of the best known (and respected) schemes include Good Environmental Choice Australia (GECA), Global Green Tag (GGT), Climate Active Carbon Neutral, and Green Star.

Founded by Green Building Council of Australia in 2003, Green Star is an internationally recognised rating system setting the standard for healthy, resilient, positive buildings and places.

"Green Star allocates a different amount of points to each of these certifications, depending on what level is achieved and how many aspects of sustainability are covered by the certification," notes Richard Hardwick, National Specification Manager at Supawood Architectural Lining Systems.

Known as RPV, these points contribute to Green Star Responsible Product credits.

"A responsible product credit is attainable for each building element. There are four building elements under which responsible product credit are attainable, which are Responsible Structure, Responsible Envelope, Responsible Systems and Responsible Finishes," says Hardwick.

"The amount of the credit attained is based on the percentage of Good Practice Products and the percentage of Best Practise Products that are used within each building element."

As the manufacturer of one of the most extensive ranges of low maintenance, prefinished architectural lining systems available on the market, Supawood has a demonstrated commitment to sustainability.

All Supawood products – including its decorative panels, acoustic panels, drop in tiles, 3D tiles, slatted panels, modular metal slats, slatted ceiling tiles, and more - have a minimum RPV value of 10, which means they qualify for the 'Good Practise' credits.

Benchtops made from recycled glass

Since its inception in 2017, Eco Benchtops has pioneered the development of sustainable benchtops. Indeed, it was the first company in Australia to use recycled glass as the main raw material used in its products.

Available in a range of colours and textures to complement various applications and styles, the benchtops are also highly resistant to staining and easy to clean.

But most importantly, they were designed with sustainability in mind.

"Over 80% of each slab consists of recycled crushed glass, which is sourced from trade waste providers in Victora and NSW," says Andrew Rottinger, CEO at Eco Benchtops. "That is equivalent to 750 bottles being used in each slab instead of going to landfill or road base."

Then, at the end of their service life the bench top slabs can be re-crushed and used to make new slabs.

In terms of reducing carbon footprint, the Eco Benchtops production process utilizes low heat and requires no water at all. And, to reduce waste, the company re-uses the frames from its imported stone to make the packaging for its slabs.

"Thanks to these various initiatives, the factory has half the footprint of traditional stone manufacturing operations with similar levels of output," says Rottinger.

WALL AND CEILING SYSTEMS

Sometimes, as in the case of Siniat, a manufacturer of lightweight interior and exterior wall and ceiling systems, it's not necessary for specifiers to look through the various products available to find something that stands out as more sustainable than others.

Thanks to the company's Opt2Act program, they can choose from a wide range of our products that fall into this category.

"Customers can opt-in to receive their plasterboard and metal framing products carbon neutral," says Kathryn Walker, Siniat Regional EHS & Sustainability Manager (APAC).

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CSR

ABOVE Alspec.

"By opting for carbon neutral product under the program, the upfront carbon emissions of a build can be reduced by up to 7%."

A wide range of plasterboard products offered by Siniat are certified Greentag Level A and EPDs available for the company's plasterboard and metal products.

"When customers opt in for the Opt2Act program, we can supply our plasterboard and metal framing products carbon neutral by using high quality offsets. The products are then certified carbon neutral by Climate Active," says Walker.

REDUCING OPERATIONAL CARBON

In assessing the carbon footprint of an architectural project, it's important to draw a distinction between 'operational carbon' and 'embodied carbon'.

Operational carbon refers to the emissions associated with energy used to operate the building – i.e. for heating, hot water, cooling, ventilation, lighting systems, lifts, and so on lifts.

Embodied Carbon, on the other hand, refers to carbon emissions associated with materials and construction processes throughout the whole lifecycle of the building, from the extraction of raw materials to the manufacturing process, transport, and end-of life.

Some building products, like insulation, window treatments, and glazing systems have the capacity to improve the thermal efficiency on the buildings in which they are installed, and therefore reduce operational carbon.

BLINDS & CURTAINS

Verosol Australia's Silverscreen range fits squarely into this category.

"Silverscreen is a high-performance fabric designed to provide exceptional solar control and energy efficiency," says Scott Comino, Marketing Manager at Verosol Australia.

"It reflects up to 85% of solar radiation, significantly reducing heat and glare while maintaining excellent outward visibility. This makes it ideal for both residential and commercial applications, where controlling indoor temperatures and reducing energy consumption are crucial."

In this way, when incorporated into the company's blinds and curtains, Silverscreen plays a significant role in reducing the operational carbon footprint of buildings.

"By reflecting a substantial amount of solar radiation, it helps maintain lower indoor temperatures during summer, reducing the need for air conditioning. In winter, the fabric's insulative properties help retain heat, decreasing the reliance on heating systems," says Comino.

Talking Architecture & Design Podcast

—TALKING—
ARCHITECTURE
& DESIGN

Uncovering what really goes on behind the scenes in the world of architecture and design…

Episode 225: 2024 AIA Gold Medal Winner Philip Thalis on urban density, transport design and how to fix Sydney

An urbanist at heart, 2024 AIA Gold Medal Winner Philip Thalis has demonstrated how a higher-density future can also yield a quality public realm and civic opportunity. His design thinking is effective across all scales: from the joy of a light-filled and affordable dwelling interior through to precinct formation and master planning.

Under his direction, Hills Thalis has successfully undertaken some of Sydney's most important urban projects, including Sydney2030, the University of NSW Master Plan, Parramatta City Centre DCP and Sydney Olympic Park 2025 Plan, Darling Harbour East and of course, Barangaroo precinct.

In this revealing interview, Prof Thalis outlines his ideas for a better designed and much fairer Sydney.

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BELOW Crafted Hardwoods.

“This dual functionality leads to significant energy savings, with studies showing that Silverscreen can reduce energy consumption by up to 20% in air-conditioned buildings and around 10% in non-air-conditioned buildings.

“These energy savings translate to lower CO2 emissions, contributing to a more sustainable built environment.”

Beyond these operational benefits, according to Comino, the material has further environmental credentials.

“The fabric is made from responsibly sourced materials, including PVC-free and formaldehyde-free polyester, which meets stringent environmental standards,” he says.

“Our PVC based performance Silverscreen fabrics carry Global GreenTag BEPPVC – Best Environmental Practice PVC certification.”

THERMALLY BROKEN WINDOWS & DOORS

In a similar vein, Alspec’s Thermaframe thermally broken windows and doors contribute significantly to thermal efficiency and the reduction of operational carbon in mind. Designed to ensure that less energy is required to heat or cool a building, they can be relied upon to reduce greenhouse gas emissions.

At the same time, products in the Alspec’s Greencore and Ultragreencore ranges are a testament to Alspec’s dedication to eco-efficient solutions. Here, ‘Green’ signifies an all-encompassing embrace of environmentally conscious practices and state-of-the-art technologies, while ‘Core’ refers to the billet, signalling that the material’s reduced carbon footprint is inherent, extending throughout its entire composition.

To quantify that, the Greencore range has a carbon intensity of just 8kg CO2e per kg of aluminium, products in the Ultragreencore range have a carbon intensity of just 4kg CO2e per kg of aluminium.

The metric, expressed as carbon dioxide equivalent (CO2e), is a universally recognised measure for assessing the global warming potential engendered during the production process. This value sets a new industry standard, showcasing our commitment to advancing the frontiers of sustainable aluminium production.

TIMBER PRODUCTS

For some product types, there are specific certifications that specifiers should look out for. Timber-related products are a good example.

“For wood products, being certified by a scheme such as the Forest Stewardship Council has a lot of weight and encompasses much more than the ecological context alone,” says Geoff Swinbourne, Founder and Director of Crafted Hardwoods.

“In fact, a big component of the certification process relies on demonstrating our commitment to not only environmental factors such as preventing illegal logging and deforestation, but social factors too, such as ensuring ethical sourcing, safe and fair working conditions and the well-being of workers.”

According to Swinburne, Crafted Hardwoods offers a new, highly sustainable supply of high-quality timbers, suitable for internal and external applications in both residential and commercial settings.

"Crafted Hardwood is a sustainable timber made from pulp-grade resources. Its innovative production method not only conserves mature trees but also repurposes otherwise wasted materials," he says.

"It is created by rotary peeling low-value, reject or juvenile logs – those usually destined for woodchips – and pressing the veneers together using a VOC-free nano-glue, to form solid timber with properties that rival centenary trees."

The resulting product is healthy, sustainable, natural, recyclable, and free of harmful chemicals and toxins.

BALSA BEAMS

Raw Inkk is a large-format printing company based in Toowoomba and is a specialist in custom architectural projects, printing unique designs on raw materials, including balsa beams, plastic board, fibre cement, and acoustic panels.

To focus on the first of these, balsa beams, the first thing to note is that balsa is the world's lightest and fastest-growing tree with commercial applications. Raw Inkk's supplier, Gen-Eco Wood Environmental Products, uses grain panels produced from 100% Forest Stewardship Council (FSC)-certified plantation balsa.

Because of their rapid growth, some balsa trees can reach full maturity (of roughly 27m) in between 5-7 years. This short growth cycle allows for efficient cultivation and harvesting practices that minimise environmental impact.

Gen-Eco has created a complete management system to nurture and care for thousands of trees at every stage of growth, from seedlings to 27m mature trees. Climatic conditions are charted, the soil is analysed, and the trees are constantly examined and measured. They also maintain an ongoing broad-based program of research into the sustainability aspects of plantation management.

WATER EFFICIENCT PRODUCTS

Like timber, products used in kitchens, bathrooms, and laundries also represent a special case. Beyond product stewardship, carbon footprint, and so on, assessing the sustainability of these products involves measuring their water usage.

The Water Efficiency Labelling and Standards (WELS) applies a mandatory water efficiency and minimum performance standard and labelling system to all water-consuming products in Australia.

Applicable to toilets, concealed cisterns, showers, urinals, tapware, flow controllers, dishwashers, and washing machines, WELS Certification is achieved through three segments – Star Rating (a scale from 1 to 6, with 6 being most efficient), Rate of Water Consumption, and Registration.

To put that in context, to achieve a 6-star WELS rating, tapware needs to deliver a flow rate of less than 4.5 L/pm. In practice the best practice products, like the Novas Prime basin mixer, far exceed this requirement. Specifically, it has a nominal flow rate of just 3.8 L/pm.

To make this type of efficiency possible, Novas has reengineered all its tapware. As it now stands, all the company's tapware is 6-star rated, while its showers have a 4-star rating. In addition, according to the company, plans to further improve the efficiency of its showers are now in progress.

As a result of these changes, the company has reduced the water consumption of its products by 22%. Importantly, however, its environmental efforts extend beyond the water efficiency of these products.

Over the last two years, Novas has been in the process of evaluating and actively reducing its carbon footprint. To quantify that, at this point it has reduced its carbon footprint by 19%.

The company has taken further steps to improve its products. Acknowledging that steel is a harder and more durable material than brass, it transitioned its tapware substrates from brass to stainless steel.

Apart from improving long term performance, this change removes the need for the substrates to be electroplated (which is a water intensive and environmentally harmful process) prior to having a PVD finish applied.

METAL CEILINGS

SAS International Australia, the Australasian division of leading British metal ceilings manufacturer SAS International, is the first company of its kind to be awarded Cradle to Cradle Bronze Version 4.0 certification. In fact, over 75% of the company's products have earned this certification.

This means that, beyond providing acoustic insulation, service integration, aesthetic appeal, cleanable surfaces, and dust-free environments, these products are designed and produced with a demonstrated commitment to circularity and environmental responsibility.

For SAS International, this involves integrating the five key principles of Cradle to Cradle certified – namely material health, material reutilization, renewable energy & carbon management, water stewardship, and social fairness - into the company's Environmental, Social, and Governance (ESG) strategy.

In practical terms, most the company's ceiling tiles are reusable, while all of its products (including its tiles, grids and components) are recyclable.

Meanwhile, thanks to the installation of solar power in its Bridgend facility and renewable energy available through the national grid, all of its products have seen a carbon reduction; and its chilled ceilings significantly reduce operational carbon emissions of buildings in comparison to traditional air conditioning. This is because they utilise air and ground source cooling, contain no moving parts, and do not require chilled water.

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Building a healthier planet with sustainable sporting facilities

WORDS NATHALIE CRAIG

The benefits of sustainable buildings are far reaching, from a reduced ecological footprint to keeping occupants healthier and preserving resources for future generations.

PREVIOUS Designed by Warren and Mahoney, Northcote Aquatic centre used Rubner Theca structural mass timber.
BELOW Himmel/Rondo – Salisbury Aquatic Centre.

Considering acoustics is another important factor in designing sustainable sporting and recreational facilities.

Sustainability should now be an essential consideration for all building projects, including sport and recreation facilities. These facilities need to be built to last and be able to support the large and diverse crowds drawn to them each day. There are a plethora of ways to ensure more sustainable facilities such as the integration of more eco-friendly materials like sustainably sourced timber and recycled rubber, selecting non-toxic coatings to improve indoor air quality and considering acoustics to lower noise pollution.

The 2024 Paris Olympics showcased how sporting facilities on a large scale can be done in a more sustainable way. Instead of constructing grand monuments as previously done by host cities, Paris chose to focus on sustainable timber structures. The new Olympic Aquatics Centre, a 5000-seat venue built mostly from wood, served as the main architectural structure for the games.

"This impressive building was constructed mostly from engineered wood. This resulted in awards for architecture and design as well as achieving sustainability targets for the building's future," Head of Built Environment at WoodSolutions Kevin Peachey says.

He says a great first step in constructing sustainable spaces and structures is to choose carbon storing timber.

"About half the dry weight of wood is carbon absorbed and stored from the atmosphere during photosynthesis. And with the advancements in engineered wood products, the potential of what we can do with timber in the built environment is growing".

Another great aspect of building with mass timber is that it can often be assembled offsite and be delivered to the site prefabricated. It reduces the carbon footprint of the build and increases safety for the installation teams as well. Unlike some traditional building materials that may require significant alteration to separate, mass timber can be taken apart more easily and with minimal waste. Mass timber is durable and, if properly maintained it can be reclaimed and repurposed in new projects, reducing the demand for new raw materials and minimising waste.

Mass timber from WoodSolutions was the material of choice for the new Point Lonsdale Surf Life Saving Club in Victoria. The two-storey clubhouse was built to be an example of coastal environmental and socially sustainable development providing a hub for year-round community activity.

Mass timber was used as the structural system to maintain the initial concept of a light-weight timber building that avoids the use of steel. Steel would have raised both the cost and embodied energy of the structure. The glue-laminated timber (GLT) members are made from thin veneers of timber, which are laminated together in the same direction to provide a super strong timber member. GLT is efficient in material use, and smaller pieces of timber can be used for large sections without affecting structural span and integrity.

For the exterior, timber cladding was chosen as a singular material response, embedding the building within the coastal context. The cladding provides warmth and tactility, and will weather gracefully, further knitting the building into the landscape. Sustainably sourced spotted gum and blackbutt were specified across cladding, decking, seating and window elements.

Spotted gum was chosen as the external structure for its durability and robust BAL resistance.

Mass timber also forms part of Australia's first 6 Star Green Star aquatic facility Northcote Aquatic Recreation Centre (NARC) in Victoria. When The City of Darebin council decided to redevelop the centre, they wanted to create an eco-sustainable facility, targeting net zero emissions.

Designed by sports architecture firm Warren and Mahoney, the centre includes a 50m outdoor pool, indoor lane pool, warm water

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Opening Solutions

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SPECIFYING CUSTOM DOOR HARDWARE FOR VERSATILE SPACES

The look, feel, and function of door handles, hinges, and locks play a crucial role in the user experience and overall aesthetics of a building. Customised door hardware allows architects and specifiers to align door components with their design vision. The importance of choosing custom solutions for versatile spaces, emphasising how tailored finishes, materials, and features can enhance a space's character while meeting functional needs. Collaborating with ASSA ABLOY Opening Solutions Australia offers specifiers a methodical approach and a wide range of options, ensuring custom solutions that fit specific project requirements.

Experience a safer
and more open world

pool, leisure pool, splash pad and learn to swim pool. The fitness and wellness facilities include multi-purpose spaces for group fitness and yoga, a fitness centre, and consulting rooms for allied health professionals.

Aquatic centres are known to be one of the most energy intensive buildings, requiring immense energy to maintain pool temperature and condition. From the outset, NARC was identified as an opportunity to become a sustainability exemplar.

The all-electric design of NARC utilised zero waste targets, prioritised water efficiency and focused on incorporating natural products, including 300 cubic metres of mass timber for the structure of the main swimming halls. The glulam timber structure as well as the entire ceiling structure formed by a cassette system was supplied by Rubner Theca. It was factory assembled, featuring visible battens. The timber provides sustainability benefits, as well as low maintenance and a welcoming aesthetic.

The glulam mass timber product is resilient to chlorine corrosion and does not corrode compared with an equivalent steel structure. In addition, the tendency of large section solid timber to twist, split and shrink is minimised in products such as glulam, which is advantageous for high humidity applications.

The swim centres' electric water and air heating systems are powered by a large solar panel roof array, reducing demand on council funds through solar photovoltaics panels and energy reduction strategies. The building operationally will be net zero through 100% renewable energy procurement.

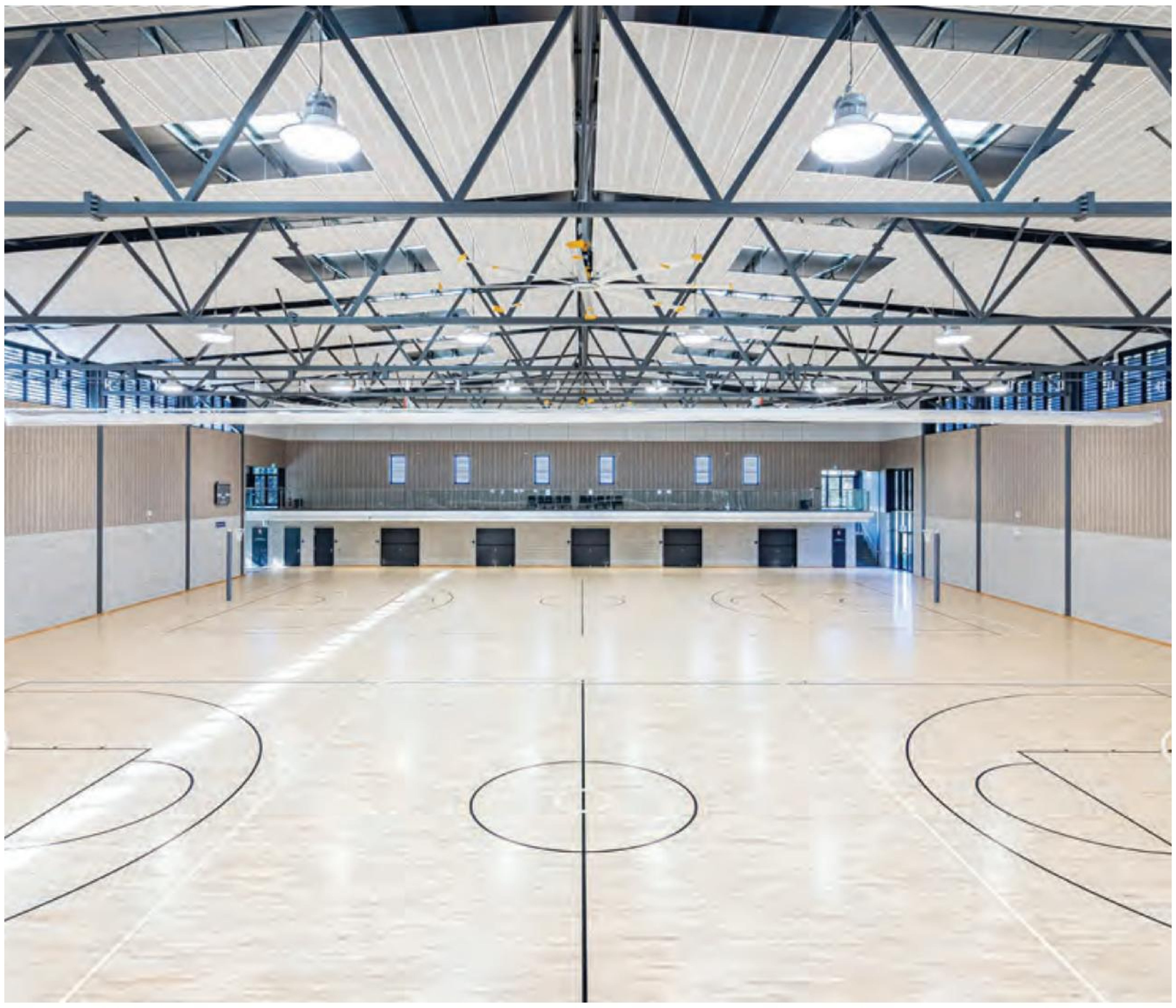
Products made from recycled materials are also a great choice for sustainable sporting and recreational facilities.

Regupol, which specialise in high-quality floors for athletes offer a range of products made from recycled materials such as their acoustic underlay, designed for impact sound insulation which is made from up to 100% post-consumer recycled rubber, contributing to waste reduction.

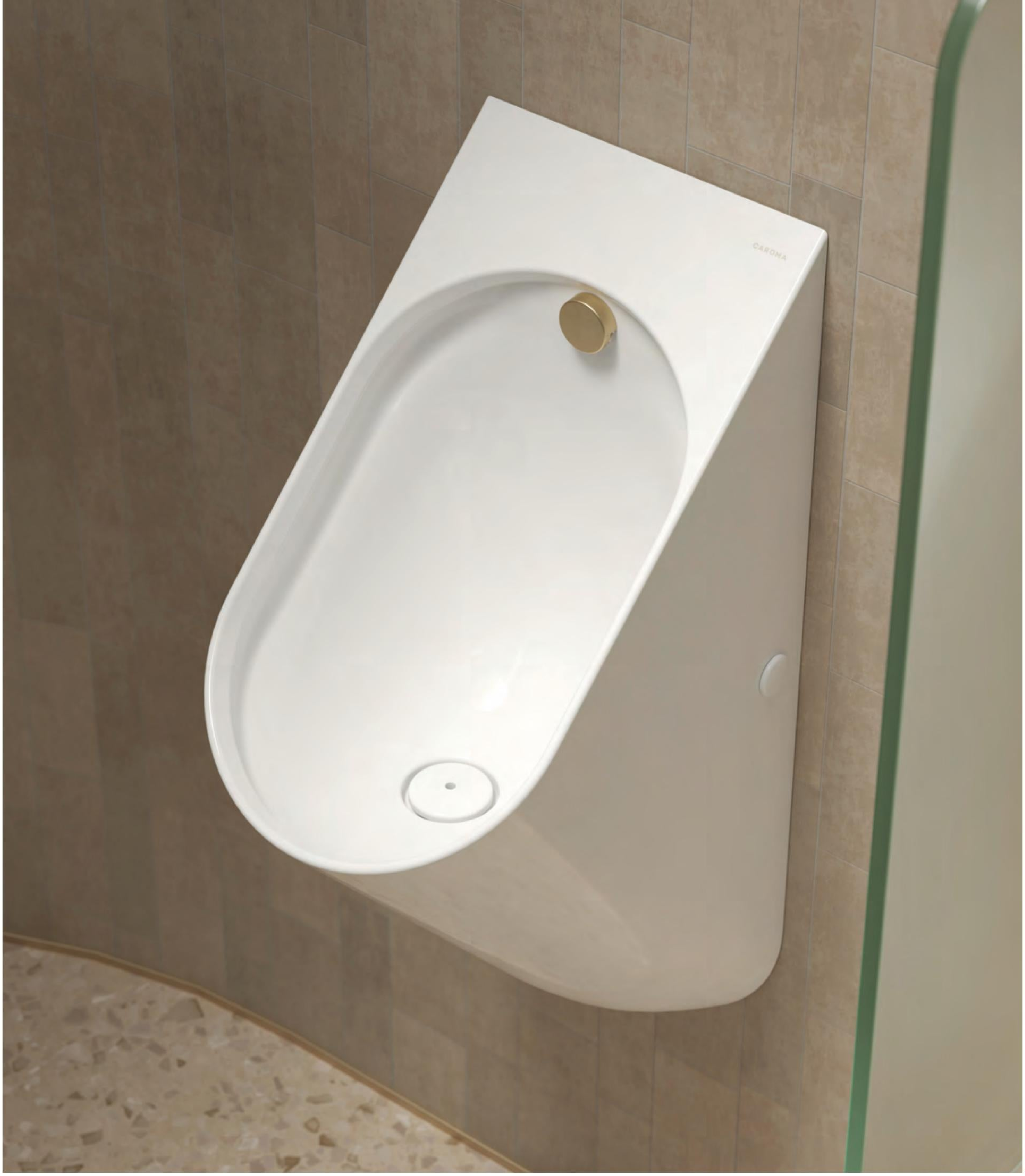
Their products also have a long lifespan, reducing the need for frequent replacements and further contributing to waste reduction. In fact, they use up to 95% recycled materials in some products.

Regupol's solutions can be seen in action at the Newcastle Knights Centre of Excellence. The cutting edge rugby league training facility is equipped with specialised training areas, recovery zones, and performance labs. There are three full-sized training fields, a 40-metre running track for speed and agility training and gym facilities accessible for both players and the community.

The Regupol everroll rubber flooring was chosen throughout as a sustainable solution that supports the athletes in their training.



TOP Newcastle Knights Centre of Excellence used Regupol everroll rubber flooring. **BOTTOM** Frensham School Sports Hall, Mittagong, NSW - Decor Systems.



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Considering acoustics is another important factor in designing sustainable sporting and recreational facilities.

"Often overlooked in sporting environments, but becoming more prominent, interior acoustics are being utilised to elevate sporting and recreation facilities functionally as well as architecturally," Rob Jones, Technical & Market Development Manager at Autex Acoustics says.

"Locally manufactured from recycled and reusable materials, our acoustic products are proudly 100% carbon neutral, enhancing the health and wellbeing of all occupants and allowing them to be repaired and maintained as required."

As well as reducing noise pollution, all Autex products are low VOC improving indoor air quality and reducing harmful substances.

Autex Composition, a durable velour acoustic wallcovering featured throughout the innovative, vertical primary school North Melbourne Primary School, including in the gymnasium. The design had to meet government benchmarks and adhere to the principles of Environmentally Sustainable Design. Autex Composition is sustainable, featuring a high percentage of recycled PET in its make-up.

Clever acoustic solutions also formed part of the Salisbury Aquatic Centre which was sustainably redeveloped by the City of Salisbury and the Government of South Australia.

Susan Powell, Project Leader with City Collective, the practice behind the project said the design prioritised equity, accessibility, and inclusion, with sustainability as an essential criterion.

"Integrating environmental considerations into the design was a key principle," she says.

"This included energy-efficient systems, water-saving technologies, and the use of sustainable materials."

It was paramount to specify enduring and high-performing materials that could withstand the demanding environment of a pool hall, while meeting environmental, aesthetic, and functional requirements.

The project team engaged Rondo and Himmel, specifying Rondo's Key-Lock Ceiling System with a 64mm Furring Channel and Himmel's Troldtekt Acoustic Panels with a K5 Edge. The Key-Lock system is designed to produce a high-quality structure, while the Troldtekt panels are resistant to moisture and suitable for installation in spaces with up to 98% humidity (+/- 2%).

That makes them suitable for environments where both acoustics and proximity to water are essential considerations. Together, they provided a reliable combination of durability, sustainability, acoustic performance, and aesthetic appeal.

All Himmel's products offer rapid-to-install acoustical benefits, with strong environmental credentials. Troldtekt has been certified as cradle-to-cradle gold, which considers the environmental footprint of the product on a global scale. Recently the product has switched to a Futurecem formulation, which reduces the embodied carbon footprint of the product by 30%.

Decor Systems also specialise in architectural acoustic solutions, designed to enhance the acoustics of large, open spaces typical of sporting arenas, gymnasiums, and multipurpose recreation facilities.

Their materials are environmentally friendly, with a focus on reducing waste and using sustainable resources in production. Decor Systems supplied acoustic panels at Frensham School Sports Hall in Mittagong, NSW that were integral in achieving optimal sound quality within the sports hall. The panels significantly reduced echo and reverberation, ensuring that the space was acoustically suitable for a variety of sports and events, enhancing both participant and spectator experience.

When designing community and sporting infrastructure, handrails, balustrades, and access ramps are indispensable components, particularly in areas prone to high crowd volumes and elevated platforms. One way to make these elements more sustainable is by selecting modular offerings like those available from Moddex.

This benefits the environment as the modular nature of Moddex's systems minimises material wastage during construction and installation, as components are precisely manufactured and can be assembled with minimal on-site cutting or modification. The durability and corrosion resistance of Moddex's systems ensure that they have a longer lifespan, reducing the need for frequent replacements and, consequently, lowering the environmental impact associated with producing and transporting new materials.

When the The Nga Puna Wai Sports Hub in Wingram, New Zealand was reconstructed following the devastating Christchurch earthquake, Moddex tackled challenges associated with crowd barrier systems and guardrails on the rugby league field grandstand including overcoming the complexities of C5 crowd loading balustrading, integrated lighting, wiring and varying ramp angles to deliver modular handrail and balustrades.

Entrance control systems are another important component of larger sporting facilities. Gunnebo has many smart solutions in this domain including a new swing gate, GlasStile S, that uses 52% less energy than the previous version. This swing gate is an optimal solution for sport and recreational facilities who are requiring an energy efficient, low security barrier that is sleek and functional. Gunnebo products are built with durable materials and their robust construction ensures a long service life.

Properly maintained Gunnebo equipment can last upward of 10 years, reducing the need to replace equipment, ultimately minimising waste.

Selecting producers dedicated to eco-friendly practices is a vital component of building sustainable sporting and recreation facilities. Duracube, for example, who specialise in providing solutions for commercial wet areas from partitions to locker systems and bench seating, take their commitment to sustainability seriously.

Their Durasafe Compact Laminate is backed by third party Certification, including being certified with a Green Rate Level A by Global Green Tag. It has also been provided a Product Health Declaration by Global Green Tag. Duracube partakes in many reduced wastage initiatives based on recycling and repurposing. For recycling, Duracube recycle and repurpose plastic packaging as crate edging to prevent damage to the partitioning systems in freight, as well as recycling the aluminium and hardware, the pallets, and other materials that fall within the partitioning system components and manufacturing process.

Duracube products feature in many sporting and recreational facilities. They were specified when Penrith City Council recently completed rebuilding the amenities building at Hickeys Lane Sports Ground. The amenities building has four change rooms equipped with ample bench seating, privacy shower and toilet cubicles and accessible toilet facilities.

A large canteen, administration office and first aid area, referees' room and four storage rooms for sporting equipment is also incorporated in the new building. Duracube supplied and installed a 2700mm high privacy partitioning system, pedestal mount partitioning system, bench seating and lockers.

Ultimately, sustainability means considering the whole life cycle of a building and the materials you choose to build it with. With careful consideration, sporting and recreational facilities can stand as strong examples of truly sustainable building projects, supporting the shift towards a healthier planet.

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Fire Testing of Walls & Ceilings: A Deep Dive

A significant fire not only endangers lives and leaves enormous property damage in its wake, but it also has long-term financial repercussions for communities and businesses. Fire testing is essential in predicting how different building products and systems will perform in a fire event. Understanding the different fire testing methods and how they relate to specific performance requirements helps builders, architects, and developers make better decisions throughout the design and construction process.

Fire Testing of Walls & Ceilings: A Deep Dive delves into the fire testing for walls and ceilings, examining the standards, methodologies, and materials used to ensure safety and compliance. The key testing methods we will cover are Fire Hazard Properties, Fire Resistance and Non-combustibility—all of which relate to fire safety requirements set out in the National Construction Code (NCC).

FIRE HAZARD PROPERTIES

Materials and assemblies used in Class 2 through Class 9 buildings must be able to effectively stop the spread of fire and minimise the amount of heat, smoke, and harmful gases that are released. To achieve this, wall and ceiling linings must meet the Fire Hazard Properties requirements listed in Clause S7C4 of Specification 7 in Section C of the NCC 2022. Table S7C4 specifies the required Group Number for wall or ceiling lining systems in different applications. AS 5637.1 provides two different methods for determining the Group Number of a wall or ceiling lining:

- AS ISO 9705 Full-scale room test for surface products; and
- AS/NZS 3837 oxygen consumption calorimeter test (cone calorimeter test).

FIRE RESISTANCE

Specification 5 in Section C of the NCC 2022 outlines the fire resistance requirements for various building components, including wall systems. Fire Resistance Level (FRL) is a measure used to determine how long a fire-rated system can endure exposure to fire under standard test conditions.

Fire resistance testing involves determining an assembly or system's behaviour when exposed to a particular heating condition and pressure. AS 1530.4:2014 provides the testing method for FRL determination. The tests are designed to replicate the product's intended end-use.

NON-COMBUSTIBILITY

Deemed-to-Satisfy Provision C2D10 requires that certain external walls, common walls, fire-rated walls, and other building elements be made from "non-combustible" materials. A "non-combustible" material is one that either is deemed "non-combustible" under the combustibility test outlined in AS 1530.1:1994 "Combustibility Tests for Materials" or is specifically listed as non-combustible or permitted for use whenever a non-combustible material is required.

FIRE TESTING AND BUILDING DESIGN

Fire testing is crucial in the design and specification process. Consulting with reputable suppliers and manufacturers to understand the performance of their systems is essential.

Gyprock™ and Rondo provide valuable solutions for designers looking to specify wall and ceiling assemblies that meet fire safety requirements. Gyprock, a division of CSR Building Products, offers a wide range of high-performance fire-rated plasterboards, such as Fyrchek and EC08 Extreme, which are tailored for both commercial and residential applications. Rondo, as a leading manufacturer of wall and ceiling systems, complements Gyprock's products by providing lightweight, practical structures for internal and external walls.

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bit.ly/CSR-Gyprock-ADQ4-2024

Australia on the fast track of sustainable transport design

WORDS CLÉMENCE CARAYOL

Sustainability in transport design? That train has left the station. More and more Australian suppliers and manufacturers are jumping the track when it comes to ensuring environmentally conscious transportation building solutions.

ABOVE Pakenham by Kingspan.

Railway stations, airports, harbours, metro… Transportation design encompasses countless – and often monumental – considerations.

A roof over the head of passengers is one of these sine-qua-non conditions of transport architecture. Ceilings play a crucial role in designing transport infrastructure, particularly in terms of aesthetics, functionality, and safety.

SUSTSAINABLE CEILING AND PANEL SOLUTIONS

Network Architectural are the exclusive distributor of durlum metal ceilings in Australia and New Zealand.

"We specialise in creating unique, bespoke ceilings for any commercial project from airports, railway stations and shopping centres to office buildings, schools, sporting venues and outdoor structures, durlum ceilings can bring a sleek, modern finish to any project," says Network Architectural Marketing Manager Jade Allerby.

Well-designed ceilings can enhance the sense of space, reduce the feeling of confinement, and incorporate lighting elements that improve visibility and safety. The materials used in ceilings can also help with acoustic control, minimising noise pollution which is crucial in busy transport hubs.

"Metal ceilings by durlum enhance spaces by combining aesthetic appeal with functionality. They offer customisable designs while improving acoustics, durability, and energy efficiency," Allerby says.

"Additionally, they seamlessly integrate with building systems like lighting and ventilation, making them an ideal solution for modern architectural projects."

According to Allerby, durlum metal ceilings are uniquely suited for transport infrastructure due to their durability, fire resistance, and acoustic performance, which are crucial in high-traffic environments like airports, train stations, and subways.

Their ability to integrate seamlessly with essential systems such as lighting, ventilation, and fire protection ensures both safety and functionality. Additionally, durlum ceilings offer versatile design options that meet the aesthetic and operational demands of transport hubs while maintaining long-term structural integrity under continuous use.

"Aluminium is used as a base material in the Gadigal and Victoria cross projects, because of its durability and resistance to corrosion which reduces any ongoing maintenance of the panels and increases the life span of the product saving the need to replace material," says Allerby.

"The panels are fully recyclable at the end of their lifespan meaning that the projects will reduce the volume of waste that ends up in landfill and aid the circular economy. In manufacturing we use up to 70% recycled post-consumer aluminium, the use of recycled aluminium can reduce the energy consumption of the aluminium panels by 95% therefore reducing the impact of the project overall."

In the same vein, Armstrong Ceiling Solutions Australia supplies a range of ceiling systems designed to meet the specific needs of transport infrastructure.

These include durable metal ceilings, acoustic panels, and modular systems that are well-suited for airports, train stations, and other high-traffic areas where aesthetics and practicality go hand in hand. Modular systems are designed for quick installation and easy access.

Armstrong Ceiling Solutions Digital Marketing Executive Jayne Macdonald is adamant: In busy transport hubs where downtime needs to be minimised, the ability to swiftly install, remove, or replace ceiling panels is a major advantage. This is particularly useful for ongoing maintenance, repairs, or upgrades without disrupting operations.

"Our ceiling systems perform several critical functions in transport infrastructure projects. They enhance acoustic performance, ensuring a more pleasant experience for travellers by reducing noise levels and controlling reverberation," Macdonald says.

"Additionally, our products can contribute to the overall aesthetic and design integrity of transport spaces, allowing architects to create visually striking and functional environments. Importantly, our ceilings used in infrastructure projects are tested to strict fire standards and can be designed to ensure seismic compliance.

"Our ceiling solutions stand out for their durability, ease of maintenance, and adaptability to complex design requirements. They are built to withstand the high demands of transport infrastructure, where longevity, performance, and resilience are crucial."

One notable project is the Brisbane International Airport Northern Concourse Expansion. For this project, Armstrong Ceiling Solutions provided a range of ceiling solutions tailored to meet the diverse needs of the terminal's various spaces.

For the departures and arrivals lounges, the company installed 1,000m² of Ultima Tegular Edge ceiling panels. Ultima is known for its high acoustic performance, offering a balanced combination of Ceiling Attenuation Class (CAC) and Noise Reduction Coefficient (NRC).

"Sustainability is a core focus for us in terms of product development including our contributions to the Brisbane International Airport expansion," says Macdonald.

"Ultima ceiling panels for are certified by Global GreenTag. Their installation helped reduce the environmental impact of the materials used, aligning with eco-friendly building practices."

Another vital component of transport design: Panels. According to Lara Okhrimenko, Marketing Marketing at Arrow Metal, the company has manufactured perforated metal panels for over 30 years that are used to provide safe and sustainable barriers for transport infrastructure as well as achieve aesthetic goals and broaden design opportunities.

"Our perforated metal panels solve the challenges of passenger privacy, visual interest, weather conditions, accessibility, and safety, whilst adhering to any required planning and design principles," Okhrimenko says.

"For transport projects specifiers usually go with perforated metal panels made of aluminium. Our perforated metal panels contribute to sustainability rating of each project they have been used for because aluminium is a highly sustainable material.

"It is 100% recyclable at end-of-life, 75% of the aluminium ever made is still in use today, and Arrow Metal uses aluminium that's at least 54% recycled content."

KEEPING IT INSULATED

Insulation is another key aspect of transport design, because it enhances passenger comfort by providing effective noise reduction and thermal regulation among others.

Kingspan Insulated Panels supplies a range of high-performance insulated panels and cladding systems that support the construction, design, and long-term maintenance of transport infrastructure projects.

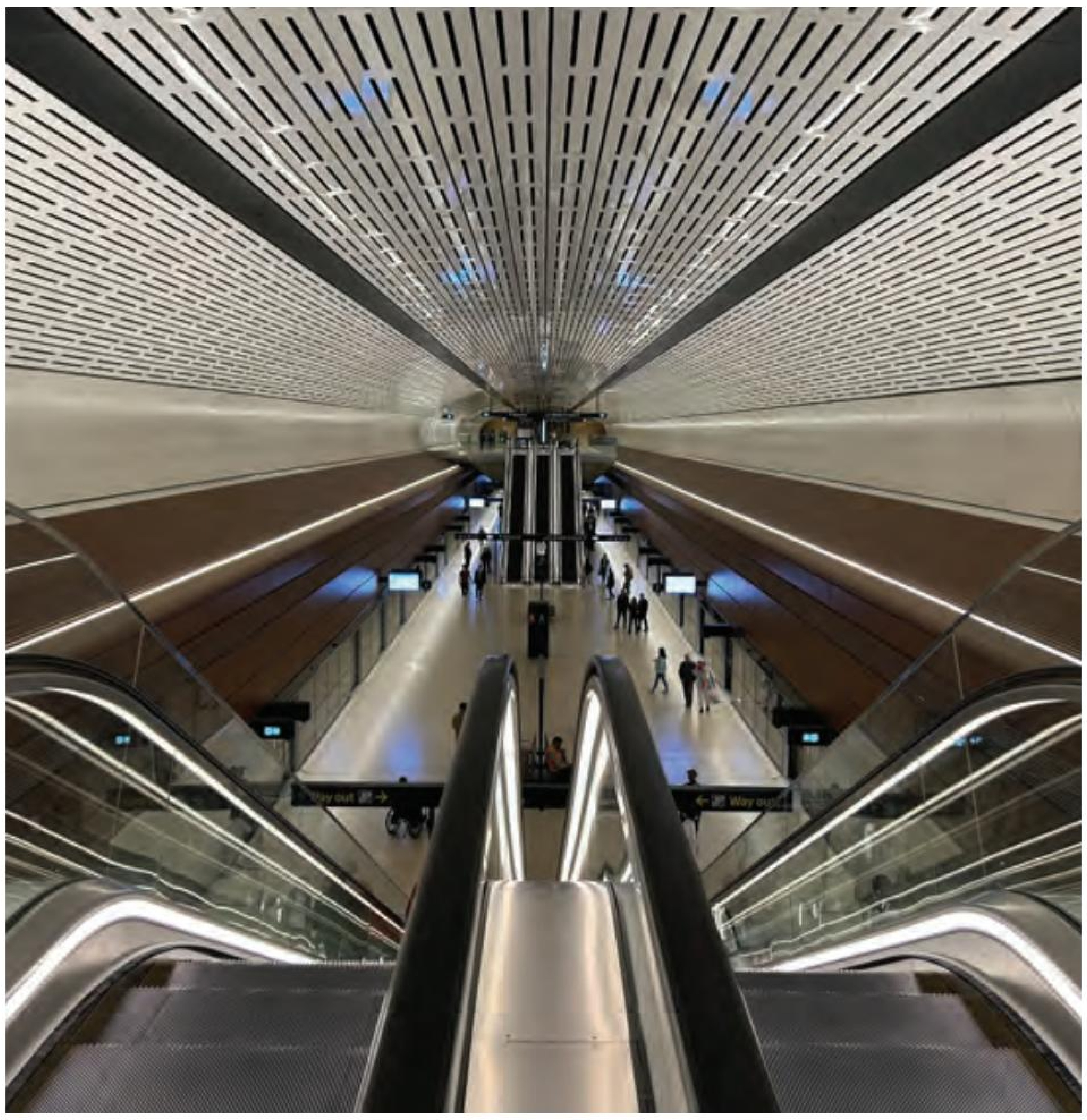
These products deliver robust thermal insulation, structural integrity, and energy efficiency. Each product is engineered to meet the unique demands of transport infrastructure, offering durability and sustainability across diverse projects.

"Kingspan's products provide key functions including thermal insulation, weather resistance, and structural performance. Insulated panels contribute to maintaining stable internal temperatures within stations and terminals, while reducing energy consumption," says Connor Baynes-Holden, Marketing Manager at Kingspan.

"The durability and structural integrity of these solutions also help extend the lifespan of infrastructure, reducing the need for frequent maintenance and repairs while supporting the continuity of transport operations. Additionally, they aid in improving acoustic performance and ensuring safety compliance for public spaces."

Sustainability is a given at Kingspan according to Baynes-Holden: Kingspan's products are known for their high thermal efficiency, durability, and sustainable attributes, making them ideal for transport infrastructure projects.

"Kingspan insulated panels provide high R-values, ensuring energy-efficient solutions that reduce reliance on external heating and



LEFT Unanderra Station perforated metal footbridge by Arrow Metal. **RIGHT** Victoria Cross Metro Station used Durlum Metal Ceilings from Network Architectural.

cooling systems. Additionally, they are made from lightweight, easy-to-install materials that contribute to faster construction timelines and lower transportation costs," he says.

Kingspan also uses sustainable materials and manufacturing processes to help reduce carbon footprints. Other significant benefits include fire performance, corrosion resistance, and versatility in architectural designs.

"Sustainability is central to Kingspan's approach, and its products consistently contribute to key sustainability outcomes in transport infrastructure projects," Baynes-Holden says.

"Using high R-value panels reduces energy consumption in buildings and results in lower operational carbon emissions, while the ease of disassembly and recycling reduces construction waste at the end of a building's lifecycle."

Pyrotek has also developed and tested a wide range of sound mitigating materials that are utilised throughout the transport industry. These material innovations are used in vehicles – cars, trucks, buses providing the means for the daily commute or in the infrastructure built to deliver a sustainable and reliable public and private transport network.

"Our approach is twofold, providing a comfortable environment for the commute, and reducing the environmental noise impact on surrounding areas," says Danielle Moore, Marketing Coordinator at Pyrotek.

"The solutions can range from interior/internal sound absorption, reduction of reverberation, thin flexible mass loaded vinyls for noise barriers – externally exposed or not, composites combining solutions into one, vibration damping and vibration isolation."

At Pyrotek, solutions are often a multi-faceted approach, allowing its technical experts to engage with the acoustic consultants in developing a custom solution for any project.

"We see our products such as Reapor, Viterolite and Decidamp RTD specified in infrastructure projects for use in the construction of road & rail tunnels, along and between rail tracks, amongst several other materials used in the construction of stations such as Sorbertextile P44, Sorberpoly 2D, Sorbermel GC, Soundlag and Wavebar to name a few," Moore says.

Insulation is also king at Knauf Insulation, a global leader in the manufacture of various types of insulation materials.

"In Australia, we supply glasswool, manufactured in the form of batts, rolls and blowing wool at our state-of-the-art manufacturing facility in Asia Pacific," says Knauf Insulation Marketing and Communications Specialist Sanhita Padia.

"All products utilise a proprietary plant-based binder technology, ECOSE technology, has no added formaldehyde making it the only Red List Free glasswool in Australia."

In the transport industry, especially in the aviation sector, thermal and acoustic performance is extremely vital for enabling an enhanced passenger experience. Knauf Insulation products have been specified and implemented in various airport terminals due to the unique properties of thermal resistivity, acoustic performance, non-combustibility, sustainability credentials and longevity that are offered.

Knauf Insulation's glasswool products were specified for use in the Western Sydney International Airport project across the Main Terminal, Terminal Pier, 7 Fixed Link Bridges, and the roof area around the airport.

"Knauf Insulation products deliver excellent thermal and acoustic performance and are available in various forms for different applications such as exterior walls, ceilings, metal roofs and interior walls," Padia says.

These products are non-combustible, have low carbon content and are free of harmful ingredients. Knauf Insulation products are made using up to 80% recycled glass with a plant-based binder ECOSE technology that does not contain any added formaldehyde.

"This enables all products to be awarded the Declare Red List Free Label which certifies that no raw materials listed on the Red List have been used," Padia says.

"This is extremely crucial to maintain indoor health quality for the many employees and customers who spend hours for travel at a stretch."

ADDING SAFETY AND SECURITY TO TRANSPORT DESIGN

Safety and security in transport infrastructure is also of the utmost importance, and the team at ASSA ABLOY is all about providing sustainable safety solutions.

ASSA ABLOY prioritises comprehensive range includes security entrance control systems, doors for transport hubs, and industrial and high-speed doors.

"Our security entrance control systems offer customisable solutions such as revolving doors, security portals, exit lanes, turnstiles, speed gates, and tripods. These systems are built for

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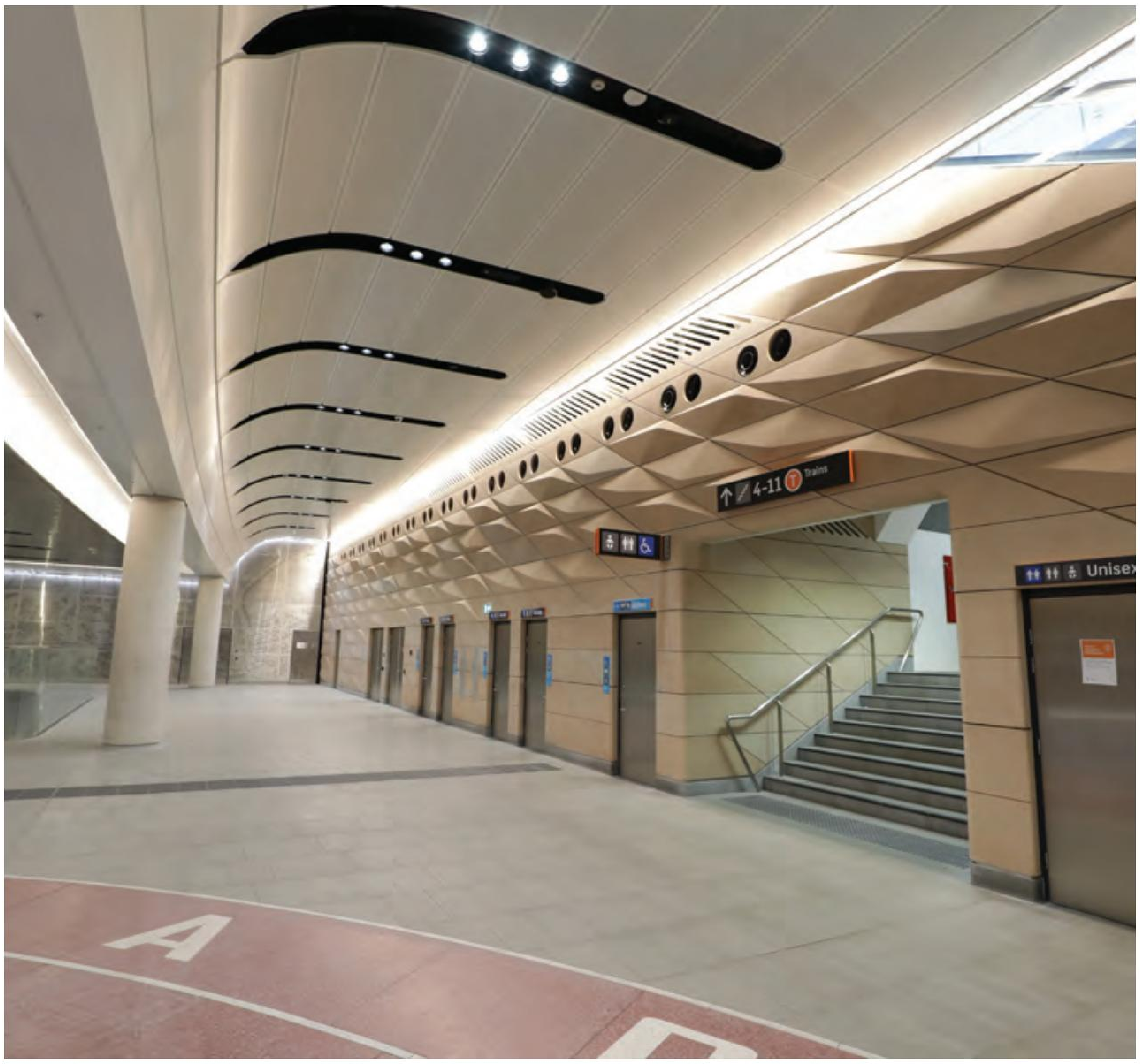
BELOW ASSA ABLOY's security entrance control systems manage access and the flow of people in secure areas.

BELOW Stoddart Infrastructure provides a range of steel and aluminium products, such as here at Central Station.



environments where security is paramount and can be tailored to meet the specific needs of your building," ASSA ABLOY Senior Marketing & Communications Specialist Gray Williams says.

"We also provide specialised doors for bus stations, train stations, and airports. Our product portfolio includes automatic doors, security speed gates, departure/arrival gates, and doors that separate security zones."

These doors are designed to be safe, secure, and convenient for both internal and external use. Additionally, the company's industrial and high-speed doors are suitable for various applications, ensuring efficient and secure operations within transport infrastructure.

ASSA ABLOY's involvement in transport-related projects has significantly contributed to sustainable outcomes and enhanced the overall sustainability attributes of these projects.

"With our best-in-class design, installation, and maintenance services, we ensure that your entrance systems are not only secure but also future-ready. Whether you are safeguarding public venues or monitoring critical infrastructure projects, our solutions are built to meet the highest standards of safety and security," Williams says.

ALL ABOUT SUSTAINABLE MATERIALS

Build it better. When it comes to materials, Stoddart Infrastructure says it knows the importance of making the right choice. The company is a prominent player in the infrastructure sector, known for its work in designing, manufacturing, and supplying a variety of products related to transport infrastructure.

Stoddart Infrastructure's focus on high-quality materials and custom solutions contributes significantly to sustainable transport infrastructure projects.

"Stoddart Infrastructure provides a range of steel and aluminium products, including structural steelwork, platforms, and handrails. These materials are integral to building durable and robust infrastructure such as bridges, railways, and pedestrian walkways," says Matthew Roe, Marketing Executive at Stoddart Infrastructure.

"By offering custom and innovative design solutions, Stoddart Infrastructure can address specific project needs in a way that optimises material use and enhances the overall sustainability of the infrastructure.

"Stoddart Infrastructure's focus on high-quality materials and custom solutions contributes significantly to sustainable transport infrastructure projects. By utilising durable, recyclable materials and offering innovative design solutions, they support the development of infrastructure that is both environmentally friendly and long-lasting."

In a similar manner, Holcim offers a diverse portfolio of low embodied carbon concrete products under the "ECOPact" brand, tailored to meet various construction needs which is used in the building and design of transport infrastructure.

"ECOPact Active mixes challenge the current perception that High Performance Concrete (HPC) Mixes generally cannot be sustainable," Marketing Manager - Value Added Products at Holcim Declan Walters says.

"Holcim is using new generation admixtures and strength enhancing additives to achieve high early age strength performance while reducing embodied carbon in HPC concrete products. These mixes also retain their plastic properties like pumpability, and finishability."

Holcim's ECOPact Active mixes can be designed, or tailor made to achieve different early age strengths to suit various precast applications. These mixes are already VICRoads approved and in use in different precast structures, in-situ stitch pour applications in various level crossing removal projects in Melbourne.

"For all projects, we know that early engagement is the key," Walters says.

"Working with the project team, identifying applications to challenge the status quo, utilising some of the digital solutions Holcim has can have significant impact on reducing the project's overall CO2 footprint."

The integration of durable, recyclable materials like aluminium, advanced insulation technologies, and bespoke ceiling systems demonstrates a holistic approach to building infrastructure that is not only resilient but also environmentally responsible. As these industry leaders collaborate to push the boundaries of what is possible in transport architecture, the emphasis on sustainability is not just a trend but a necessity, setting a benchmark for future developments in the sector.

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Talking Architecture & Design

Sustainability: As hosts of the Sustainability Awards for the past 18 years, we know a thing or two about the value and importance of sustainability to our urban environment.

Launched in 2017 as part of the Architecture & Design publishing and news network, Talking Architecture & Design interviews industry leaders, innovators, personalities and a range of industry movers and shakers. With no subject that is off-limits, we talk to those that not only make change happen, but also those that turn that change into industry norms and trends.

EPISODE 219: GABRIELLE SUHR FROM SJB ON THE ROLE OF SUSTAINABILITY AND WELLBEING IN MODERN DESIGN

With a focus on elevating the ease of everyday living into memorable moments of delight, Gabrielle brings clarity and refinement to the design process that ensures considered and rewarding outcomes.

As project lead for Nightingale Marrickville, alongside Juan Munoz-Tamayo and Charlotte Wilson, Suhr has seen the project from conception through to completion - resulting in Nightingale Marrickville receiving the Premier's Prize, Commendation for Residential Architecture – Multiple Housing in 2024.

bit.ly/TADPodcast_219

EPISODE 215: JEFF MORGAN FROM HASSELL STUDIO ON LOWER CARBON ALUMINIUM IN THE BUILT ENVIRONMENT

A commercial architect with 20 years of international and local experience across institutional, commercial, retail, serviced apartment and residential projects, Jeff Morgan creates an environment of learning and collaboration that inspires those around him to do their best work.

Jeff leads the charge on sustainability in the Sydney studio and contributes to Hassell's global sustainability strategy and industry groups.

bit.ly/TADPodcast_215

EPISODE 212: ADAM HADDOW ON THE FUTURE ROLE OF ARCHITECTS

Adam Haddow has been a director at well-known architecture firm SJB since 2002. Haddow is a Churchill Fellow who is known for his study of alternatives to conventional models of urban design.

As NSW Chapter President of the Australian Institute of Architects, Adam leads the Institute in its mission to promote excellence in architecture and advocates for the role of architects in shaping the built environment.

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EPISODE 209: EILISH BARRY TALKS ABOUT SUSTAINABILITY & DESIGNING THE PERFECT PRECINCT

Eilish Barry, a project leader at Hayball, found her passion for architecture through a pivotal conversation with a family friend who emphasised the profound impact architects have on shaping the built environment.

Barry's work showcases a commitment to designing for both social and environmental wellbeing, incorporating considerations such as local materials, communal spaces and support for local labour opportunities.

bit.ly/TADPodcast_209

EPISODE 206: DESIGNING APARTMENTS IN SHOPPING CENTRES COULD SOLVE HOUSING CRISIS SAYS ROTHELOWMAN PRINCIPAL

Chris Hayton embodies Rothelowman's core value of radical exploration – creating bold, sustainable, and inspiring places for people and cities.

In this podcast, Hayton explains his design of the residential part of the magnificent Burwood Brickworks Shopping Centre and how this trend for building apartments in shopping centres is both new and different form the usual residential typology.

bit.ly/TADPodcast_206

Top Episodes (All time)

EPISODE 1: Talking with Robin Mellon, CEO of Australia's Supply Chain Sustainability School

EPISODE 2: Talking with Helen Lochhead, President-elect of the Australian Institute of Architects

EPISODE 97: My sustainability journey by 2021 Sustainability Awards Lifetime Achievement winner, Tone Wheeler

EPISODE 91: Stephen Choi talks about biophilic design and the opportunities it brings to architects

EPISODE 52: Koichi Takada talks about sustainable design and how COVID-19 has forever changed how we work, live, and design our buildings

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South Pine Sports Complex, QLD
Photo: Cam Murchison

How Moddex makes it easy to get it right with Sales Director Joe Rowland

Moddex "take the fear out of compliance challenges", says company Sales Director Joe Rowland.

Joe describes Moddex as Australasia's leading and pioneering manufacturer of modular, no-weld handrail, guardrail, balustrade and barrier systems that are pre-configured and pre-engineered for structural integrity.

He says navigating compliance in the sector can be a real minefield so Moddex has "tried to really dumb it down, simplify it and make it easy to get it right".

"The biggest challenge we see with ramps is they're not designed with the compliance of the handrail system. The base structure is inadequate for the load once you put the handrail on," he explains.

This is what led Moddex to modularise the actual ramp substrate itself with a goal to have modular ramps delivered in 3 to 5 days anywhere in Australia.

Joe explains that Moddex systems are easy to specify, quick to install and are in high demand with 900 to 1000 metres of hand railing systems going out a day across Australia and New Zealand.

The modular system also lends itself well to a circular economy; something that is particularly noteworthy given that balustrades and handrails are often specified for shorter-term projects.

"There is a real opportunity that's created with a modular system to bring those castings and bring those systems back in and reuse them. With a traditional welded or fabricated system you're talking about cutting it up with an angle grinder or oxy torch. It's a messy process and it's a lot of scrap steel that can't be easily reused," he says.

The modular system, on the other hand, can be pulled apart the same way as it is put together and then reused in another application.

Some iconic projects Moddex has been involved in recently include several rail and infrastructure projects such as the rail Level Crossing Removal Project in Victoria which will see 110 dangerous level crossings removed across Melbourne by 2030.

"They're going through taking out the old level crossings that are dangerous and taking the rail either above the road or under the road and with that there is a lot of infrastructure, concrete, pathways and handrails and barriers," Joe says.

Right now Moddex is working on installing systems as part of the major MELconnx and METConnx projects in Western Australia involving lifting rail lines above the road and constructing the METRONET rail line circling Perth.

"We are really are custodians of public safety," he says.

Looking forward Joe says Moddex is looking to extend what they've created Down Under and take it to other parts of the world. They're also committed to investing heavily in technology within the business. This includes both systems and platforms they use inside the business to be efficient and deliver quickly. They are also investing in platforms that can extend outside the business to users of the product, allowing them to interact and go as far as designing certain elements of their projects.

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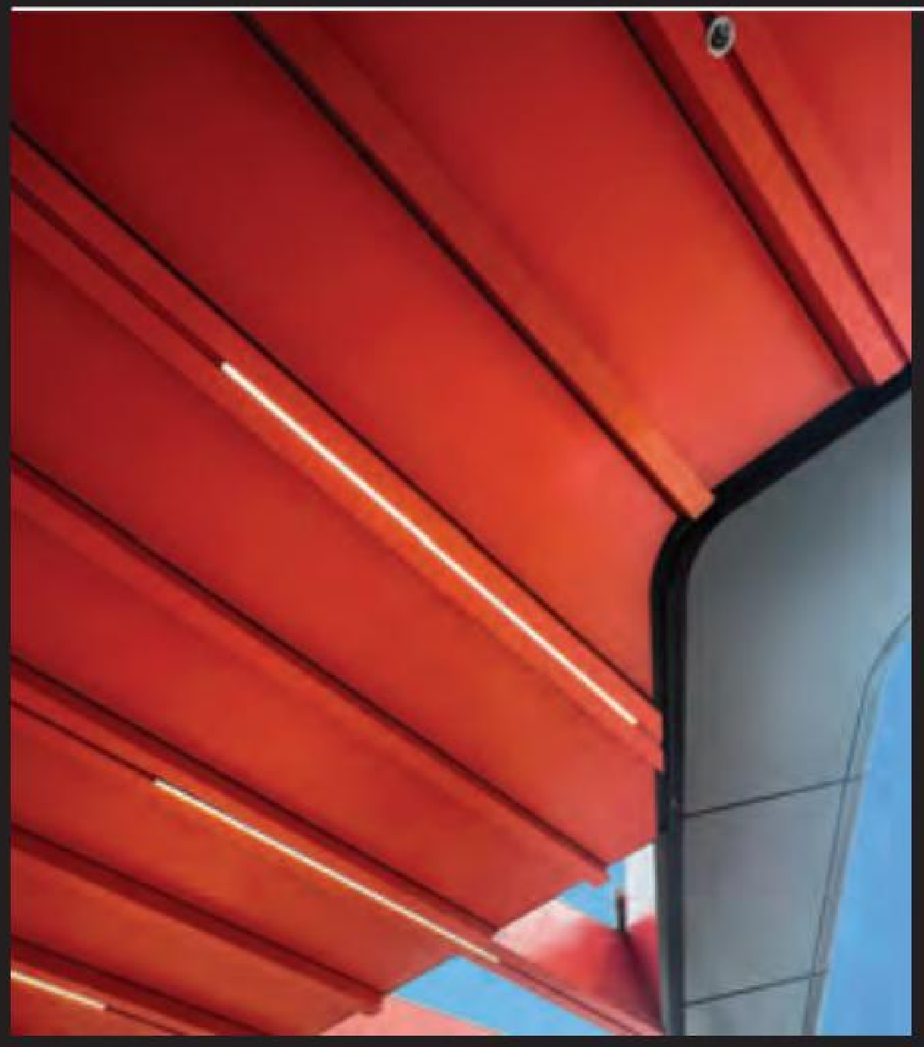

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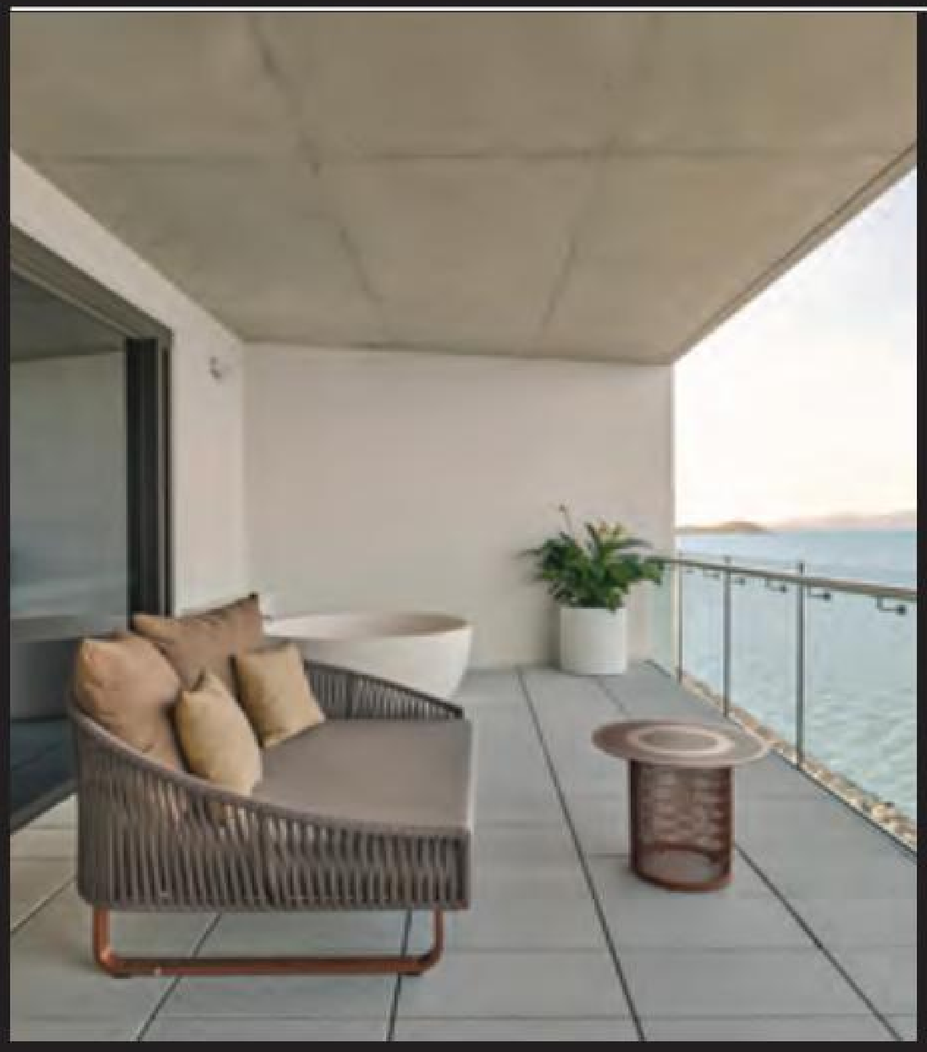

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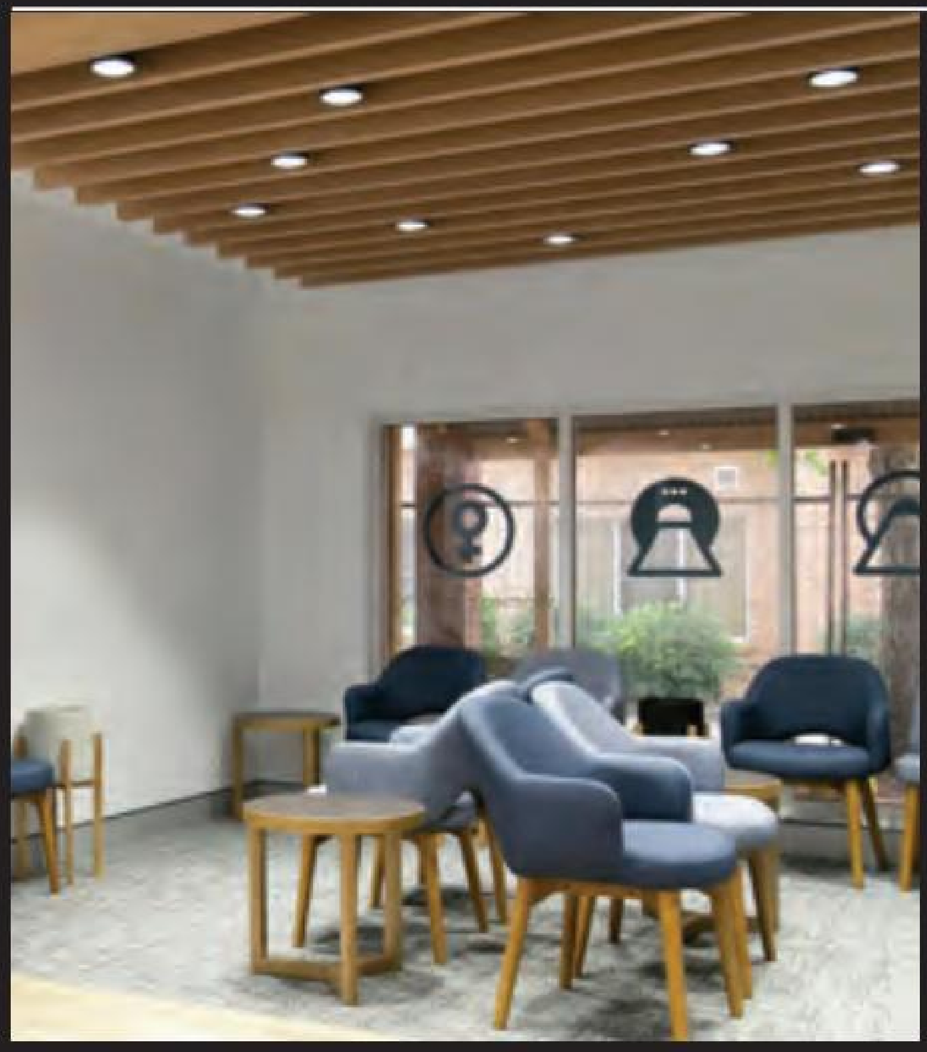

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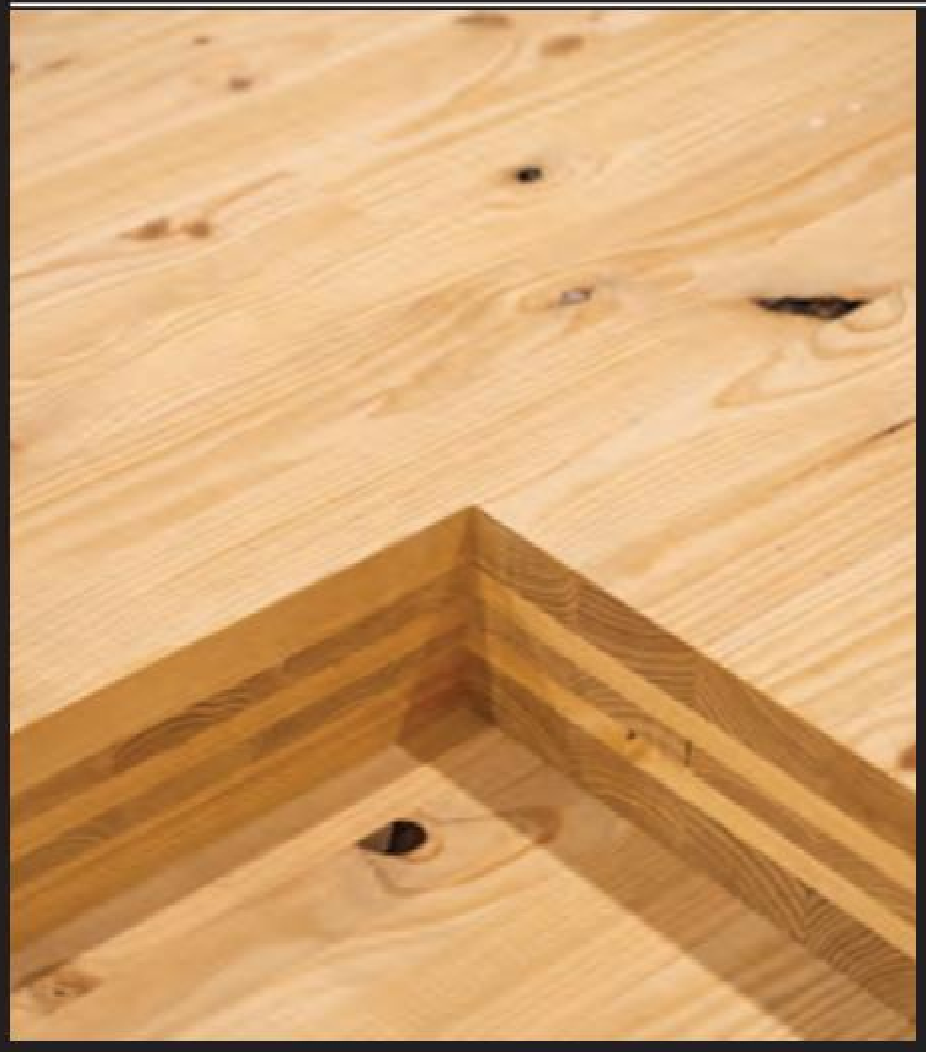

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